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ESPECIALLY DDC. USERS LOOK AT THE DoD INFORMATION TRANSFER PROCESS

COMMITTEE ON INFORMATION HANG-UPS

JANUARY 1975

ESPECIALLY DDC

Users Look at the DoD Information Transfer Process

Washington, D.C.
Committee on Information Hang-Ups

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The group recommends action in four areas:

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*By DoD. Serious obstacles to the information transfer process within DoD were identified. Users suggest that changes in policy for administering, distributing and releasing information are necessary; and that planning for and supervision of the information transfer process should have higher status in DoD management than it now does.

*By the Executive branch of the Federal government. A substantial part of the difficulties found in transferring information arises because there is no coordination of the process among divisions of the Executive branch of the government.

*By the users. Users should take an active part in developing a climate of opinion favorable to establishing such coordination.

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INTRODUCTION

In June, 1974, the Committee on Information Hang-Ups was invited by Hubert Sauter, Administrator of DDC, to attend a one-day meeting at the Center. At that meeting, he challenged the group, as part of the information community, to provide a substantive input to DDC's long range planning study. He asked the Committee to share responsibility for decision making by reviewing existing DDC services, by identifying user requirements for the next ten years, and by helping to establish long range goals. In other words, the Committee was asked to come up with tangible, measurable facts that would demonstrate the problems encountered in Defense-related information activities and suggest cost-effective solutions for the future.

A Steering Committee was formed to determine how best to tackle the project. This Committee met on July 9, 1974, and individual members were assigned the responsibility of assembling four separate working groups out of the membership of the Committee on Information Hang-ups. Each of these became a sub-committee with these responsiblities:

1. Evaluate DDC Services: Collect quantitative measures (statistics). Question users as to the value of services. Document any unusual impacts, such as cost to user. Cover announcement services, retrieval services, document services and peripheral services.

2. User Collections and Information Services: Identify information available within the user organization, the uses of this information and means of acquisition. What are the users' needs?

3. Generation and Management of DoD Information: Identify the relationship of people in the chain--sponsor, monitor, project leaders, etc.--and their responsibilities. How do service regulations, including limitations, as well as internal and external information transfer procedures influence dissemination?

4. Objectives of DoD Information Program: Take the long range view. Assume that mission changes are possible and include DDC as a part of the picture. Project a ten-year development plan.

Each subcommittee established its own approach to its task and produced its own report which was presented to the whole committee for review and discussion. The reports as modified by the reviews make up the body of this document. The Introduction and the closing chapters are by the members of the steering committee.

It should be noted that the lead time in which a report could be made and be of value was limited. The librarians and information personnel making the investigations were also carrying a full workload for their own organizations. Under these constraints, there was a limited amount of coordination between the working groups. Admittedly, duplication of ideas occur in the four reports.

The following pages contain many criticisms of DoD information services, especially those of DDC. Note well that the criticisms are of remediable faults, not of DDC's major activities, and that recommendations are made in the spirit that in every field of endeavor, improvements are always possible. The librarians using DDC services feel the Center is performing a useful function and doing it, on the whole, well. DDC is a part of DoD, and the DoD information transfer process has also been looked at during this study. Here the users of DoD information feel that there are more serious faults and more radical treatment is required. It is recognized, of course, that the problems of the transfer and use of scientific and technical information are so all encompassing that DoD cannot solve them alone.

EVALUATION OF DDC SERVICES

Report of Subcommittee I

The Subcommittee to evaluate Defense Documentation Center Services lcoked at the basic functional services provided by the Defense Documentation Center--announcement and retrieval services, document services and peripheral services--and considered the cost of these services to the users. Questionnaires and surveys convering these areas were devised and distributed to members of the Committee for Information Hang-Ups, and in some cases to other DDC users registered for specific services. The results are summarized and evaluated here.

For presentation of the results of the surveys, the report has been arranged into three main sections, as follows.

ANNOUNCEMENT AND RETRIEVAL SERVICES

Automatic Document Distribution (ADD)

DDC in its user guide describes the ADD program as "microfiche copies of newly accessioned technical reports selected according to a user's subject interest. This service anticipates a user's need through a comparison of subject interest profile against computer data bank of accessioned technical reports, as those documents are announced in the Technical Abstract Bulletin (TAB)." ADD has been operational since July 1971. As of June 1, 1974, 110 organizations subscribed to ADD. These organizations had profiles consisting of descriptors, identifiers, source codes, project numbers, and COSATI fields and groups.

Of the 110 questionnaires sent out, 53 replies were received. Of these 53, eight were not receiving ADD fiche, due either to termination at their request or due to DDC-user communication problems. Details of the questionnaire and the replies appear in Appendix B; in summary, it found:

1. There is a DDC-user communication problem.

   a. Eight of 49 replies indicated that they were not receiving ADD.

   b. Another 7 indicated that field descriptors are too broad. Comments indicate an unawareness of what type of terms may be used to construct a profile.

   c. The ADD program is confused with NTIS's dissemination program.

2. Recipients have difficulty in attaching a value to the service.

   a. There was only one negative reply to, Is it worth the cost? Yet of the 31 organizations paying for the service, 17 said ADD has not affected ordering and 5 said it did not save time. Further, only about 1/3 indicated that money and/or time were saved (especially waiting time for a document that has to be ordered).

   b. Fifteen percent of the respondents did not know what the costs involved were.

3. Billing and distribution drew no negative replies from those regularly receiving ADD.

4. Most of the documents shipped are added to permanent collections.

   a. Over 1/2 of the replies indicated 100% retention.

   b. Almost 2/3 use this service to build up collections in particular areas.

   c. As a group, only information centers clearly indicated in-depth screening of ADD fiche.

5. Other organizations could benefit from this service.

6. The value of this service would be greatly improved if "L" documents were included.

Automatic Magnetic Tape Distribution (AMTD)

DDC describes this as a tape service which provides to the subscriber a magnetic tape containing bibliographic data on all DDC-accessioned R&D reports received during the two-week period preceding announcement in TAB. The tape is the equivalent of the printed TAB text and is to be used on automatic data processing equipment in the subscribing organization. The subscription fee is $1,000 for one year (twenty-six issues).

In an attempt to measure the timeliness, usefulness and comparative value of the tape service, this committee sent a questionnaire to each of the ten subscribers to the service. A list of subscribers, current as of 24 June 1974, was provided by DDC.

(Replies to the questionnaire are tabulated in Appendix C.)

Conclusions

The most significant fact revealed by the responses to this questionnaire is that fully 30% of the subscribers listed by DDC maintain they do not get the TAB tapes. And one who does get them has never used them. This raises some questions not answered in this survey. Are these subscribers paying $1,000 a year for a service they do not receive? Or are they receiving a service they cannot identify and do not know how to use? Either explanation indicates an almost total lack of communication between the user and the supplier of this service.

Those who do receive and use the TAB magnetic tapes use them primarily as a current awareness tool. Only one respondent uses the tapes for subject searching. The printed TAB, on the other hand, is the tool of choice for verification of bibliographic information, identification of specific reports and subject searching. This indicates a limited and rather narrow application of a service based on sophisticated technology.

Current Awareness (CA)

The Current Awareness (CA) program is a free bibliographic service which DDC offers on a regular basis to users who have registered for SDI service. The bibliographies are based on users' interest profiles and contain listing of documents available from DDC and NTIS.

A questionnaire was sent to the 68 registered users of the CA service. Thirty-two users responded, and the results of those responses are tabulated in Appendix D.

The Current Awareness service is sufficiently satisfactory to retain all but four of the original subscribers.

Wide circulation within the receiving organization is done in only 6 cases. A pilot test by widening the circulation to 10 or more might bring better usage.

A study should be made to learn why only 6 users requesting documents from the listing are receiving 100% of them.

A review and revision of profiles is recommended; a bare 50% of those replying indicate willingness to pay for the service; 38% consider it a primary source of information, and 80% a secondary service.

Technical Abstract Bulletin (TAB)

"Technical Abstract Bulletin (TAB) - a classified (Confidential) publication, prepared on a two-week basis, listing all new classified and unclassified/limited scientific and technical reports received by DDC within that time frame.

For announcement purposes, the technical reports are grouped into a two-level arrangement consisting of 22 major subject fields with further subdivision into 188 related subject groups, and assigned an AD number for requesting and retrieval purposes."

DDC users registered for classified information are eligible to receive TAB free of charge. There are about 2,700 DDC users, 1,700 of which are eligible to receive TAB, of these 998 do receive it.

This questionnaire was sent to approximately 120 Hang-Ups addressees representing 108 organizations. Not all of the organizations are DDC users. The Librarians/Information Specialists of 33 organizations responded to this questionnaire (see Appendix E).

These are the major findings of the survey:

1. The general feeling conveyed by the responses is one of satisfaction with TAB, but it cannot be determined from this survey how useful non-eligible organizations might find it.

    a. The publication schedule was considered to be satisfactory by all but one respondent.

    b. The arrangement and format of TAB and its indexes had no negative replies, although 1/3 felt that the COSATI categories were not adequate.

c. All but 3 thought TAB offered enough retrieval points.

d. About 1/2 indicated that the use of TAB had not changed due to its security classification.

2. It was generally felt that an unclassified TAB would be more useful than a classified TAB, but not if it meant a decrease in information content.

3. A strong sentiment was expressed in favor of having all AD numbers appear in one publication.

4. The cumulated TAB Indexes receive more use by librarians than TAB itself.

5. Project names and identifiers should be available in the indexes.

6. The non-TAB questions indicated a lack of DDC-user communication.

Work Unit Information System (WUIS)

Early discussions of Defense Documentation Center (DDC) services uncovered the fact that the Work Unit Information System (WUIS) was used by most organizations with the assumption that it is both current and complete. Some of the experiences of subcommittee members indicated that this might be a false assumption. Therefore, a letter was sent to all members of the Committee on Information Hand-ups asking that each member request a Work Unit Search from DDC on his own organization name or source code. Each committee member was then asked to compare the search results to the number of on-going tasks or projects at his organization and attempt to determine what percentage of current projects were reported in the Work Unit Search.

The number of returns was small, but these, combined with the results from several telephone calls, indicate that military organizations report almost 100% of on-going projects. Contracting organizations, on the other hand, range from 1% to 10% of on-going projects reported.

Statistics on how much the WUIS is used were not requested from DDC. No attempt was made to find out why contractor reporting was so poor or what could be done to improve this situation. Further study on the value of the system is recommended.

Defense RDT&E On-Line System

The Defense RDT&E On-Line System is a network of remote terminal stations linked to DDC's central computer system for instant visual display of data from three major data banks -- the Technical Report (TR) Program, R&T Work Unit Information System (WUIS), and the R&D Program Planning (R&DPP) data bank.

The typical terminal installation consists of a cathode ray tube (CRT) display console with a keyboard and a page printer. The user queries the system by typing either an expanded or an abbreviated command on the keyboard and pressing the transmit button. The response is displayed on the CRT screen a few seconds later. By using various commands, the user is able to switch from one data bank to another in pursuit of information, and to print out the information on the Communications Output Printer associated with the terminal.

At the present time, the network consists of approximately 40 terminals. As indicated by the replies to the questionnaire (Appendix F) the system has undergone rapid expansion in the last two years. The replies represent approximately two-fifths of the remote terminal users.

In viewing the replies to the questionnaire, it should be noted that the respondents represented sites with a median value of one year's experience on-line to DDC. The operators tended to have been with the site for the same length of time. The following general observations can be made:

1. The respondents indicated that the user felt that in 90%of the searches the results were satisfactory or better, but fewer than 50% of the operators felt that, after an exhaustive subject search, they had retrieved 90-95% of the relevant items.

2. DDC computer room personnel cooperation with remote site personnel should be improved.

3. Of the DDC produced reference tools, the most frequently used and best liked was DRIT. DRIT hierarchy received the most criticism and least use.

4. Fourteen out of 15 sites use designated operators who spend up to 60% of their time on terminal related activities. Primary operators spend an average of 30% each on these activities.

5. The respondents seemed anxious to have more frequent and better communication with DDC.

6. The changes and comments indicate the direction which the respondents felt DDC should take in improving the system to meet their present needs.

DOCUMENT SERVICES AND USER CHARGES

Document Services

The Document Services Questionnaire was intended to recover data indicating how DDC's main document supply function was working and, if possible, indicate problem areas. The questionnaire was sent to all people on the Information Hang-Ups mailing list. The 123 people on the list represent 91 individual organizations located generally in the Washington metropolitan area. It was assumed that people responding from these organizations would be both DDC users and knowledgeable of DDC services. Twenty-nine organizations replied. Of these 29, two do not use DDC and one was returned because the person shown on the address label was no longer at that organization (Appendix G).

Several general conclusions can immediately be made from the comments and results tabulated on the above questionnaire. It is apparent that:

1. There is a lack of awareness of other than the most basic DDC services.

2. People are, for the most part, satisfied with the document acquisition service they are getting from DDC.

3. Limitation statements continue to be a problem. Even though only two questions pertaining to "L" documents were asked and both questions precluded identifying problems, answers to other questions kept indicating problems with "L" documents. L's are obviously points of frustration to both librarians and users.

There were two other specific points which should be considered:

1. One area is "rush" service. The majority responding to the question on rush service did not have problems with the current service and would be willing to pay for it. While the majority felt that the turnaround time for the receipt of a report was reasonable, they felt it did not compensate for the lack of a rush service. At the same time, the majority were not willing to pay for pick-up service, in direct contradiction to replies to the previous question.

2. In the area of microforms, 21 organizations were using some type of microform. Of these 21 organizations, the majority use them occasionally and one never.

User Charges

On July 1, 1968, the Defense Documentation Center began to charge $3.00 for hard (paper) copies of reports received into their system after August 1965, while continuing to supply microfiche copies free of charge. Also, payment for such classified documents had to be made to the Clearinghouse for Federal Scientific and Technical Information, now the National Technical Information Service (NTIS). At that time, DDC turned over to CFSTI the responsibility for sale and distribution of all publically available AD documents, which previously had been handled by DDC. The price for these was $3.00 for hard copy and $.65 for microfiche.

In 1971, DDC began charging $.95 for microfiche copies, instead of issuing them free of charge, and $3.00 for all hard copies, including the older documents. That same year, NTIS raised the price of its hard copies to a sliding scale of $3-$6-$9 and began charging $.95 for microfiche copies.

In 1972, there was a push to release limited unclassified documents and many more were sent from DDC to NTIS for distribution. At the same time, DDC users were asked to pay for the NTIS United States Government Research and Development Reports (USGRDR) and index, now the Government Reports Announcements (GRA) and index, which previously they received free of charge. The higher cost for hard copy from NTIS vs. hard copy from DDC was now considered by many to be an unreasonable rip-off.

In 1973, NTIS changed its pricing policy from the sliding scale to a fixed individual price for each hard copy document based on its potential sale. The cost of microfiche also was raised to $1.45. At the same time, pre-paid coupons were dropped. This forced users either to do business with a poorly run deposit account system or to pay by cash, check or American Express credit account.

In 1974, NTIS announced that customers requesting special order processing would be required to pay an additional fee for rush order service--$10 per copy (paper or microfiche) if mailed and $5 per document if picked up, this in addition to the basic price of the document.

Prices of AD numbered documents ordered from NTIS keep going up at a rate far in excess of prices charged by DDC for classified documents or of price increases in industry. Further, the quality of delivery from DDC is far superior in terms of speed and quality of copy. From neither source is there opportunity for the customer to examine the product before purchase in order to verify its worth.

In order to collect data that would help measure the impact of user charges, especially on Federal agency and contractor libraries, a questionnaire was distributed to approximately 40 members of the Committee on Information Hang-ups in the Greater Washington, D.C. area. It also was enclosed in a letter that went out from the Federation of Information Users and the SLA Government Information Services Committee to approximately 80 Regional User Groups around the country. Thirty of the 40 were returned from the D.C. area and 10 came in from the other parts of the country, by the deadline date. These represented 20 government libraries and 20 non-government libraries.

The questionnaire was in two parts. One part was a Library Questionnaire to be filled out by the library manager or person in charge of acquisitions. The other was a User Questionnaire which was to be duplicated by each library and distributed to at least a sampling of its own user community. (The responses to these questionnaires are tabulated in Appendix H.) The findings are:

The general reaction of the user community is that user charges are squeezing library budgets. Man-hours are required to maintain deposit accounts and keep the books, adding an overhead cost to library operations. Acquisition policies have been altered, document orders reduced, and individual users denied information which might be helpful to them.

Librarians are adapting in one way or another to user charges. Many of them are switching to microforms as a means of saving time, space and money. They also have reduced the number of documents they order, especially for selective dissemination of information, except in a few cases, where they have entered a program of selective dissemination of microfiche.

Most government agency and contactor libraries cannot pass along these costs to their end users, except to reallocate charges to contract projects. Either way, the costs are passed back to the Government, with bookkeeping and processing overhead costs added. Even so, there is a saturation point to libraries' ability to absorb these costs. Most libraries operate with fixed budgets. Librarians resent being exploited by rapidly rising user charges, especially when they do not bring with them an equal quality of service -- in the way of announcement information, prompt delivery, or good document copy that the individual users demand.

Individual users, on the other hand, are being pressed by librarians to use microfiche because it is cheaper. Individual users dislike microforms. They want "workable" copy on which they can write notes, to spread over the table and be able to compare side by side. Such copy is expensive. Users want their copy promptly. (They waste valuable time waiting for documents, scanning microfiche, and then ordering and waiting for a hard copy of the same document.)

Most individual users say that cost has little effect on their ordering of documents, but a significant number say they order fewer documents because of it. When cost, format or legibility become unacceptable, they look for alternative methods of satisfying their requirements. They borrow more often from colleagues, try to short-cut the system, and sometimes go without the information.

Without any question, user charges have effectively lessened the flow of Government information to libraries and end users--especially the peripheral kind of information that promotes professional development, stimulates new ideas and is the leading edge of tomorrow's research and development. This is the true impact of user charges, and its effect on Defense R&D is incalculable.

PERIPHERAL SERVICES

DDC peripheral services can best be described as those services which do not fit neatly into any of the other categories of services studied by this subcommittee. The services to be considered here fall into two general groups: publications and information services.

Publications include the DDC Digest, DRIT, scheduled bibliographies, and other equipment guides and information directories. Information services include the DDC library, the Referral Data Bank, the DDC registration files and the NATO subregistry. A brief description of many of these can be found in User's Guide To: Defense Documentation Center Programs, Products, Services published by DDC, November 1974.

A survey of these services was conducted by phone. Twenty registered users were surveyed, and their responses are tabulated in Appendix I.

The results indicate that many DDC users either don't know about, or don't care to use, many of the peripheral services offered to them by DDC. This failure to take advantage of the wide range of information resources available results either from a lack of direction from DDC or from an absence of curiosity on the part of the librarian who is dealing with DDC. The former can be rectified, the latter cannot.

If the peripheral services offered to the user community are worth the time and money required to offer them (and most respondents felt they were) then these services should not go unused.

CONCLUSION

1. A communications gap exists between DDC and its users. The users of DDC feel that they are better informed than they are. A public relations program is recommended, which might well include issuance of a series of "fact sheets" on one service at a time. These sheets would refer to a Users Manual for further information and/or give a name and telephone number at DDC to contact.

2. Library users say that if we are going to pay for information services, we need to receive quality service. On the simplest level there is not even an opportunity to examine the worth of a publication before one buys it and really no real provision for rejecting it if it proves to be unsatisfactory.

3. Traditionally, DDC has been document oriented. This will probably always be a major thrust because the published report is evidence of accomplishment and, indeed, is required as the end product of most DoD contracts. In recent years, DDC also has moved toward broader user services, such as providing management information through WUIS. This trend should be encouraged as a valuable service, but it needs stauncher support from official channels for more adequate input of information.

4. At least half of DDC's effort should be toward improving the present system as much as possible. The other half should be toward expanding into experimental programs with the future information needs of users in mind.

5. Two questions not addressed by this subcommittee, which should be studied because they are of major concern, are the number of documents which should be in DDC and are not, and the relationship of DDC with other DoD-oriented information disseminators, such as NTIS, AEC, NASA, and the Information Analysis Centers.

USER COLLECTIONS AND INFORMATION SERVICES

Report of Subcommittee II

Subcommittee II was responsible for examining how DoD information was used once it reached the user's organization and how the user obtained it. Fortunately, information and its transfer has been investigated sufficiently during the last dozen years that, while many details remain unclear, the broad sweep of the process, especially the process of transferring recorded information, is fairly well understood. It is also fortunate that, when we think and talk about information, we usually mean recorded information, often in the form of formal technical reports, for this is the chief component of DoD information.

THE FLOW OF INFORMATION WITHIN AN ORGANIZATION

Diagram 1 shows how information flows when one user within an organization seeks to fill one information need. It is a simplistic diagram because the statistics that might portray the differences in the volume of information flowing between the various stores of information do not exist. Definitions of the three types of information stores shown are in order if the diagram is to be understood as it was intended:

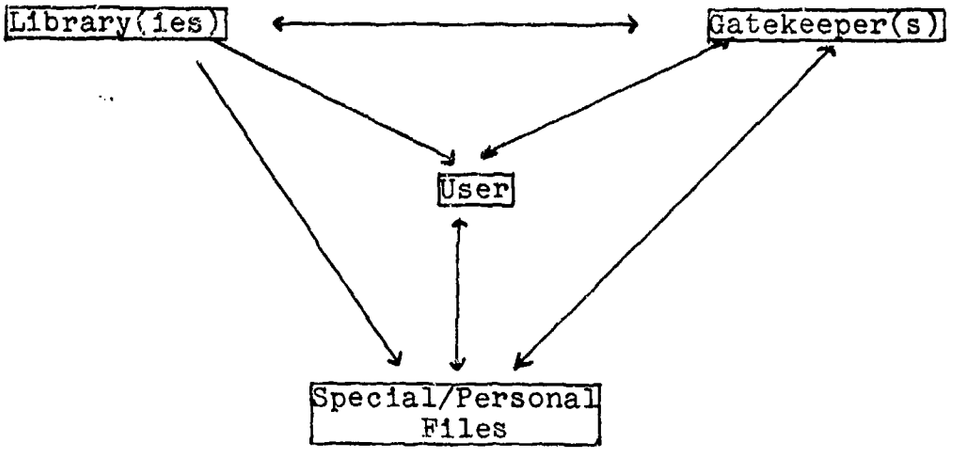
Library(ies) - the major information store(s) in an organization which collect(s), store(s) and make(s) available data to the members of the organization. Such a store has permanent staff whose responsibility is to make its data available. It can also be described as a physical store of organized information with mental storers present to facilitate its use.

Special or Personal Files - either the unofficial files of a user collected because the material in them supplements and supports his particular interests, or formal collections specially organized to meet particular, very localized needs. These formal collections are frequently outside the cognizance of the library,

may be closed to access from outside the organization and, in some cases, may also be unavailable to the majority of members of the organization. These physical stores do not usually have mental storers permanently attached with responsibility to make the file data available.

Gatekeepers - mental storers of information, usually detached from a physical store. They are those persons who know what's new, what's important in their field, and where the data describing both is within their own organization, in other organizations including libraries and data collections elsewhere, and in publications. Library staff are undoubtedly gatekeepers to their library collection and often to other sources as well, but the term "gatekeeper" is usually applied to others in an organization, outside the library. A gatekeeper may well be a consistent and dedicated user of the library but he will have personal contacts elsewhere as well and, because he is a member of the peer group of the user, he will often be consulted for desired information ahead of the library staff. The gatekeeper acts as a filter for information from within and without the organization for others on the staff, and sometimes for the librarians and the keepers of special files as well.

Diagram 1. FLOW OF INFORMATION WITHIN AN ORGANIZATION



INFORMATION FROM OTHER ORGANIZATIONS

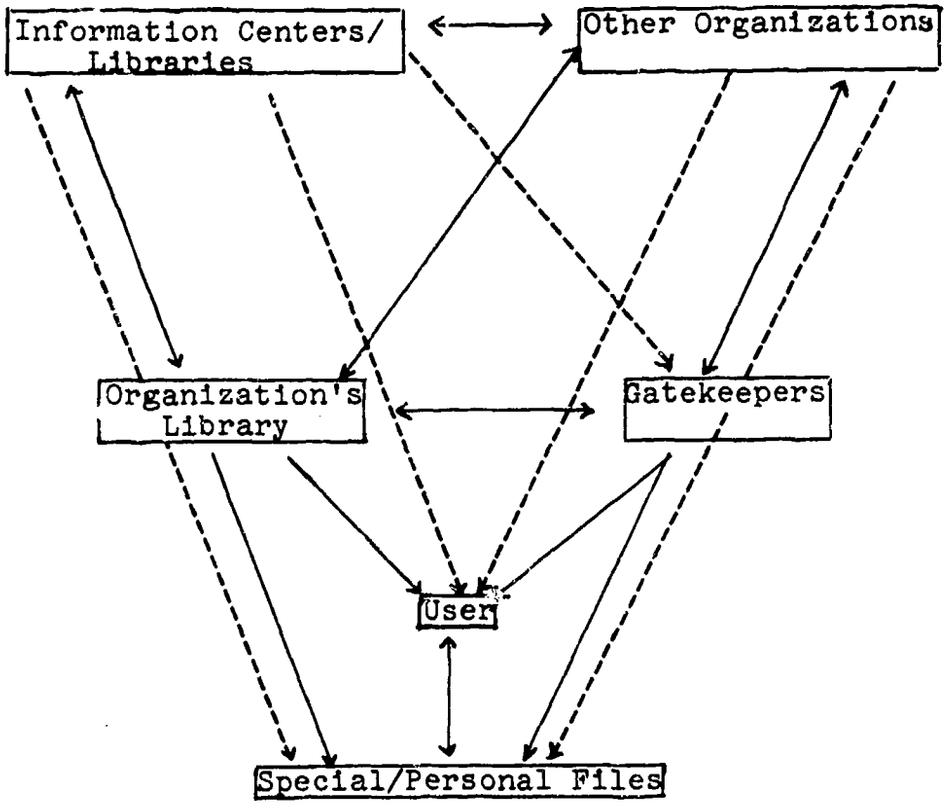
It is a rare organization which exists without needing information from outside its own boundaries. In the flow of information between organizations, the role of gatekeeper, or the mental store role, tends to become somewhat less important than the physical stores of information.

Information Centers and Libraries are the major sources of data. They are the formal collectors and disseminators of information--the libraries, the document clearinghouses, the information analysis centers, the information processing firms, and the information industry. They collect, process, and make available, free or at a price, information. Very often, it is not the ultimate user who comes to these stores, but another library or information center which, in turn, will service the ultimate user.

Since all organizations using information, initiate information as well, other organizations than formally organized information centers and libraries generate and disseminate information formally and informally. In formal dissemination, the new data goes to the information centers and libraries for incorporation into the formal channels of information storage, retrieval and dissemination. In informal dissemination, data passes through gatekeeper channels between organizations or--more rarely--through the gatekeeper into formal channels.

While there has been less study of the flow of information into an organization, what is known suggests that it may be diagrammed as a more complex version of the internal flow diagram. Statistics are lacking to indicate the amount of information flowing in any one direction, but those of us who are custodians of information stores feel the flow is heaviest between Other Organizations and Information Centers/Libraries, and between Information Centers/Libraries and the organization's library. An organization's special and personal files occasionally receive material direct from other organizations, although usually their input is filtered through the organization's library and local gatekeepers, or is generated within the organization. While it is possible for the ultimate user to go directly to sources outside his own organization, the majority of users do not do so consistently or frequently.

Diagram 2. FLOW OF INFORMATION INTO AN ORGANIZATION



Frequently used ————
Infrequently to rarely -------

DDC'S POSITION IN THE INFORMATION FLOW

A look at how printed information flows does not go far toward establishing how DDC should plan its information services in the future, except as it emphasizes DDC is only a part of the universe of information.

DDC is also a member of the class "Information Centers and Libraries" so, in Diagram 2, "Defense Documentation Center" may replace that class label. The diagram then may represent how DDC gets its information and where it disseminates it to the user. This subcommittee, composed of randomly selected members of the Committee on Information Hang-Ups, surveyed themselves as a sample of DDC's customers to determine if the diagrams were valid for their organizations and, by extension, other DDC users.

In the subcommittee of 13 members, ten different organizations are represented, all but one representing a library within an organization. The tenth is a government agency and a physical store of information of the type, "Libraries and Information Centers." Of the nine organizations having libraries represented, one is an association, four are corporations or quasi-corporations, and four government agencies. All of the corporations are government contractors, with at least some DoD contracts. Three of the four government agencies are part of the Department of Defense complex; the fourth agency is purely civilian oriented. The association is also oriented to civilian interests.

VALIDITY OF THE DIAGRAMS

In the survey initiated by the subcommittee, the following aspects of information, information use, and information management were considered:

1. What Are The Information Sources Within Our Own Organization?

The association and the four corporations have libraries; special departmental files exist away from the library; many personal files exist. The government agencies have libraries, but in replying, only one was specific about other files in the agency. This government library is the lead library in a network of two hundred departmental libraries, which exchange information, and which also furnish data to a number of special files not part of the official libraries. All the respondents to this question felt that their staff members consulted with each other as "gatekeepers" of information as well as going to the formal libraries and special files existing within the organization.

2. What Are The External Information Sources Counterpart To The Internal Sources That Are Consulted In Obtaining Information For Our Organization?

All those replying agree their library goes frequently to other libraries and information centers, and occasionally to other organizations, and that staff members consult their counterparts doing related work (i.e., "Gatekeeper" contacts). Various search services and data bases are also used, usually by the libraries for their users.

3. Does the Organization Receive Information Automatically?

A corporation library and the library of the association receive no material through automatic distribution. Libraries of the other organizations surveyed do, though the amount differs greatly. The recipients also differ in how they handle it: two corporation libraries and a government agency library are selective in retaining such material. The fourth corporation library keeps, without question, all material received on automatic distribution. A government library retains only three copies of each publication of its agency that it receives on automatic distribution; material from other sources received automatically is kept on a selective basis. All libraries get material as a result of specific requests they initiate.

4. How Does The Information In The Organization Library Get Into Use?

All libraries polled offered potential users within the organization, reference services and search services. Most also loaned material, though one does not; one or two routed or placed on a reading panel, newly received material. Most produce and distribute announcement and accessions lists. At least one maintains a current awareness service for users. In short, there is an active effort on the part of the libraries to make information in their stores available and to see it is used. Although none of the respondents mentioned it specifically, the potential user of information also initiates demand for information by requesting reference and loan services.

5. What Computer Service is Available Within The Organization?

Three corporation libraries and at least one government agency library have some internal library operations on the computer. One DoD agency library is on line with a special DoD computer indexing and retrieval service. Two corporation libraries are on line with the somewhat similar commercial services, Locheed's DIALOG and System Development Corporation's ORBIT. The government agency library that is oriented to the civilian sector is connected with the Ohio College Library Center (OCLC) library cataloging network, and with a system of data bases for reference work. A corporation library was the only user of magnetic tape as an information source or element. In summary, not all libraries have access to computers. Among those that do, utilization of computer services and programs varies in amount and degree of sophistication.

6. How is Information in the Organization's Library Purged, Weeded, or Disposed Of?

While it was generally agreed space limitations and the age of the material affect how long it may be retained, none of the librarians replying had an unambiguous policy on purging material. One government library said superseded material in documents and reports was replaced when more up-to-date material was received; their periodical files were weeded on a time schedule. Lack of use as well as age determine when books are weeded in a corporation library which also weeds periodicals by age and by use. This library also purges reports from other agencies by age, the subjects with which they deal, and whether they are likely to be replaceable if needed. Another corporation reports doing only highly selected weeding as older data is important in its particular field of interest. Another governmental library is studying the problem of weeding and purging.

7. What Are The Observed Needs of the Information User of the Organization?

Scientific, social scientific, and technical information is wanted by all users of the organizations reporting in proportions that vary according to the projects of the organization. "The information needs ...are extensive," one librarian said succinctly.

The time frame within which needed information is to be obtained was not always reported; those who did report agreed the range varies from within one day to up to three months, with average demands being satisfied if the material was received in a 7- to 21-day span. Material less than five years old was wanted in most cases, but not by all; some libraries reported requiring information several decades old.

One library noted that 65% of all information requested is sought from the subject approach. This same library noted that 52% of all library use is for periodicals, 36% for industry and government reports, and 12% for books. Another library observed 38% of its use is in books, another 38% in reports and the remaining 24% in periodicals.

Hard copy and microforms are both accepted by users; there was no direct comment on which format users preferred. Respondents did comment that English was preferred in the presentation of information though a few foreign language periodicals and some material in translation were required to meet user demands. One library has a translation unit attached to it.

Not much was reported (perhaps because it is not known) on user preferences in information.

8. Can the Organization Afford the Data or Information Service Needed?

"Few libraries can afford the full range of programs they believe are necessary to adequately meet all commitments," one government librarian said in answering this. Another said, "Any large increase in costs of present services could cause problems" while indicating, as did four other librarians, that the budget was adequate for most present needs. A corporation library, most of whose work is for DoD, says it always provides needed data no matter what its cost; at the same time, it reports the cost of procuring technical reports is being written into some of its new contracts as a direct charge to the contract, instead of being part of overhead costs, which is the source of its library budget.

Several implications can be read into replies of this nature: Organizations attempt to budget for known information needs. Money will always be available for immediately needed information, but money for material selected for possible future use or to strengthen the collection may be less available. Costs are rising more rapidly than budgets. And, finally, those who allocate funds are not as aware as librarians of the range of information needs.

No one attempted to answer the real, though unvoiced, question, "Can my organization afford the real cost of information?" Perhaps it is unanswerable today.

The findings of this brief self-survey confirm that Diagram 2 adequately represents the flow of information within an organization and into it from external sources, including DDC. The model may be used in planning future services to information users, by DDC or other information storehouses.

THE FLOW OF INFORMATION FROM AN ORGANIZATION

But what about the flow of information from the organization to external sources? A ninth question on the survey attempted to answer this.

9. What About the Reports of the Organization Itself?

When information is generated within an organization, it is recorded in some way, most frequently in some form of report or publication. Do these reports reach other organizations? Yes, but not always.

The discussions of our group make it apparent that within every organization, there are a spectrum of formats in which information is reported, ranging from the very informal to the highly structured and controlled form. At the informal end, distribution is very limited, often no more than within the walls of the initiating office. At the formal end, reports are distributed outside the organization. In the middle of the spectrum, handling and distribution varies greatly between organizations and even within the same organization.

Within most organizations, some unit (usually the library) is designated as the depository of reports. This certainly means all the reports at the formal end of the spectrum and the majority of the ones in the middle are deposited where they may be found and used. The usual intention in setting up a central depository is that even the informal reports are to go there, but how completely the intention is carried out varies from day to day in each organization. It is a unique library that has <u>every</u> report produced by its organization.

Report distribution is usually handled by some other unit than the library so that librarians usually have no control over, or input to, or even knowledge of how distribution statements and lists are determined within their organizations. Thus, the pattern of distribution or lack of it in the middle of the report spectrum is confusing.

About the best that can be said is that much less than half of the information reports generated within an organization will reach external channels, but that most of the reports generated within an organization can be located through the organization's library. This may be as well. The very nature of many reports generated within an organization is such that they are of little value elsewhere.

RECOMMENDATIONS

After looking at the flow of information within, into, and out of an organization, this subcommittee believes that while each organization has its own peculiarities of organizing and controlling information and all users their own ways of obtaining information, Diagram 2 shows the process of information transfer into and within an organization to end users in the detail an information collecting and transfer organization such as the Defense Documentation Center needs. The subcommittee believes that the Defense Documentation Center, in planning future service to users, should give major attention to directing the flow of information from the Center to the formal units within an organization that store and make available information (i.e., "Organization's Library(ies)" on Diagrams 1 and 2).

These units are best suited to channeling information to the special and personal files within the organization. Their existence tends to formalize the flow of information and to allow better data gathering and statistical study. Channeling information to them encourages dependence by the individual information user within the organization on library resources, thereby increasing library support and capability, and improving user satisfaction. Everyone will gain, if DDC emphasizes service to libraries.

Since not every organization has a library, DDC must continue to give some attention to channeling information to the special files of an organization and to gatekeepers but this is of secondary importance.

We are suggesting, in short, that the Defense Documentation Center, and similar information clearinghouses, should consider themselves in the same category as publishers, the major part of whose business is with jobbers and other bulk purchasers. Publishers do sell books to individuals, but direct sales to readers is of very minor importance in their overall business. In the DoD community, the organization's library stands in relation to DDC as the bookstore or jobber does to the publisher.

GENERATION AND MANAGEMENT OF DOD INFORMATION

Report of Subcommittee III

This group agreed to identify those relationships which exist among the people in the DoD information chain--sponsor, monitor, project leader, etc.--and to investigate the responsibilities of those people. They also considered the impact of service regulations, including distribution limitations, and of those internal or external information transfer procedures that influence the dissemination of DoD generated technical information.

To provide the background of this report, a questionnaire was sent to 34 members of the Information Hang-Ups Committee asking each of them to interview five of their research-oriented library users. Sixty-four responses were received from the following thirteen participants:

Army Concepts Analysis Agency
Army Foreign Science and Technology Center
Army War College
Atlantic Research Corporation
Atomic Energy Commission
Bendix Communications Division Services
NASA Langley Research Center
National Military Command System Support Center
Naval Oceanographic Office
Naval Ordnance Laboratory, White Oak
Naval Ordnance Station, Indian Head
Naval Weapons Laboratory, Dahlgren
Westinghouse Defense and Space Center

The questions used by the Generation and Management of Information Subcommittee (see Appendix I) were intended to show what operations might have an effect on DDC programs. After digesting the survey findings the Subcommittee members agreed to include some recommendations as part of their report because they wanted to highlight those ideas deemed critical to the effective planning efforts of DDC personnel and to the transfer of technical information or technical "intelligence" within the DoD community.

DoD generated or sponsored work projects, most of which result in information, originate either from an individual's ideas, or from a laboratory or organization's commitment of funds to develop a concept, or they may be assignments to provide solutions to a perceived need for the creation, adaptation or modification of a technology, system or component. There are other forms of DoD intelligence which enter into and are indeed considered in the initial decision to undertake these projects. Some of this type of information is available to the DoD community, but not in organized channels.

GENERATION OF INFORMATION

For the most part, the survey indicated that in production of a technical report the work project is initiated by someone and then the project is set into motion. At this point in the information flow the DD 1498 Work Unit Information Statement is issued providing the essential details of the project and giving the names of the principal investigator, project manager, and contracting monitor. This is a second level in the report production sequence and one which the survey showed to be unknown to many of the respondents.

Once the project is underway the responsibility for reporting on its progress lies with those performing the work. This reporting through the contract or project monitor is probably the best understood and best organized part of the information production stream since there is a product (a report) which is printed and distributed. However, as was shown in reply to Question 3, the distribution of these reports is influenced by the many considerations of security and by other limitations, some of which appear almost capriciously imposed. We might regard these as some of the boulders in the information development stream to be navigated around with caution and discretion.

Concurrently with undertaking a study there originates another stream or sequence: the acquisition of input information to the study. This is cyclic with most respondents agreeing that information needs are heaviest at the project's start, but that they continue through t.e project's life. Convenient access to all types of information and data is a constant requirement. The project worker will seek information wherever he can be reasonably sure of finding it: from his peers, the library, information centers, and the bits he has stored away himself. Responses to the survey indicate however that the availability of services from information analysis centers and the specialized data banks are not well enough known, or perhaps, not easy enough to access.

MANAGEMENT OF INFORMATION

One message which emerged loud and clear from the survey replies was that although the interchange of information from generator to user was widespread and desirable, the identification, location, and the mechanisms for attaining such information in printed form were the greatest obstacles to a smooth flow of defense technical information. Difficulties imposed by classification and distribution limitations were most frequently cited as problems and although the questionnaire did not pursue this, the identification and acquisition of the technical information outside the formal scientific reporting format has always been recognized as extremely difficult.

The answer to Question 6 (Where do you turn for the first cut of information?) was gratifying, indeed, to every information person since it shows that there has been more use of the library for the first cut of information in contrast to the conclusions of the Auerbach and NAA surveys of the 60's. However, perhaps this is only an indication that the libraries, once designated as the organized interface for obtaining desired information from DDC, do make information from that organization (and by extension from other DoD information sources) easier for the user to obtain. There is perhaps a message in that: organized storage and distribution of all DoD information from a minimum number of access points is more efficient, is economical, and is appreciated in the long run.

Based upon the survey findings the following conclusions have been reached by the Subcommittee members:

1. Security classification, although not an insurmountable obstacle,does present some problems in the flow of information from the producer to the consumer. The main problem is that access controls are often exercised by low-echelon personnel who do not have the necessary expertise to exercise sound judgment. In other words, it is easier to say "No" than to risk making a mistake, which of course is punishable (e.g., no promotion).

2. Distribution controls other than security are another factor presenting an obstacle in free information exchange. The use of limitation statements as authorized by DoD Directive 5200.20 places a heavy burden on information exchange especially if the information is unclassified. Again the philosophy of "No is easier" comes into play when limitation statements are assigned. Moreover, although specifically intended to be a non-security control mechanism, the use of distribution limitation statements is often used as a substitute for security controls.

3. The concept of the Work Unit Information System (DD 1498) is indeed a good one. Several deficiencies, however, make it less than useful. The major deficiency is that there is no real enforcement mechanism available which would oversee 100% input. There is no way of telling what percentage of DoD research effort is in the data bank. Another failing is in the availability of output to contractors. A large number of records in the data bank have access limitations again assigned on the "No is easier" principle. A third limitation is that input to the DD 1498 system is mandatory for DoD and its contractors. (The Navy has the best track record for compliance; others make no effort at all.) Input is not mandatory for other federal agencies. Thus a researcher trying to find out what is going on in his particular field will find out about the DoD work only--maybe.

4. Communication between producers, processors, and users of technical information at the working level appears to be quite adequate. However, the survey shows that a great number of information users do not know of the existence of specialized information services such as the DD 1498 and DD 1634 data bases, and the DoD sponsored Information Analyses Centers. Some users haven't even heard of DDC.

We believe that the most common form of communication in use today is the informal discussion between scientific and technical personnel. Scientific and technical meetings and symposia serve a great purpose in providing person-to-person communication. This direct contact is enhanced by our modern communication media such as the telephone, TV, satellite, computer networks, etc. The printed media serve only to document the information that is exchanged in the informal mode, which is, of course, a necessary requirement.

5. Scientific and technical intelligence is another great untapped source of technical information in the intelligence community. Access to the intelligence community which at best is difficult for DoD activities is almost impossible for contractors. However, a mechanism for contractor access, although carefully controlled, does exist and does work. The main difficulty is the compartmentalization within intelligence organizations and the fragmentation of intelligence activities which make it frustrating for even those who need the information legitimately.

6. Interagency coordination at the management or policy-making level appears to be low. This is no doubt due to the lack of high level leadership. Elimination of Committee on Scientific and Technical Information (COSATI) and lack of interest in Congress had much to do with the present state of apathy in the technical information field.

RECOMMENDATIONS

DDC would do well to expand its user education program, highlighting such specialized information services as the DD 1498, DD 1634, and other available data bases, and the Information Analysis Centers (IACs). The IACs complement DDC's services. DDC should implement its proposed program to form a network with the IACs. It would combine the benefits of both these information resources.

However, the DD 1498 Work Unit Summary Program needs a stronger backbone. There is no one in authority to force compliance with the DoD Dir-ctive 7720.13. The DDC staff should work toward 100% input to the data base. Simultaneously, DoD should make the directive the enforcement mechanism required. This could become a valuable program. As it is now advertised it is grossly misleading to researchers. After months of frustrating effort they belatedly conclude, "It is not what they say it is -- the data just isn't there!" Of course, these people themselves may be the real culprits. Unless directed to do so, they will not make input to the data base.

DDC personnel and their user community together should attempt to influence policies governing the access controls which now hamper the flow of technical report information. These access controls and the use of distribution limitation statements as a substitute for security control need not impede the free flow of technical information. New policies can be developed which will result in procedures that facilitate the transfer of defense information within the community.

Access to other types of technical information such as planning documents, technical manuals, intelligence reports and materials not found in the main information channels requires coordination at the management or policy-making level of several DoD agencies. Her again we found evidence of a vacuum. There is no one in authority to "manage" the entire defense information business.

Among the recommendations discussed by the Subcommittee and thought to solve some of the problems enumerated above emerged one which stood out above all others in importance and necessity. This was the creation of a high-level office in the Executive Branch which would be responsible for policy direction of an over-all federal scientific and technical information program. It would furnish the much needed guidance and policy direction for DDC, NTIS, AEC, and NASA and it would do much toward eliminating the many barriers to the smooth flow of information.

In order for the Executive Branch to establish such an office it must be authorized by the Congress. To motivate Congress it in turn must be prodded by a higher authority--the people. The prodding, therefore, must be initiated from a source outside the Executive Branch. This outside source would be largely comprised of the users in the industrial community and their professional organizations, and the pressure would be transmitted in the traditional manner by Congressional lobbying. It is reemphasized that it is up to industry to furnish the pressure. Without this support nothing will be accomplished.

OBJECTIVES OF DOD INFORMATION PROGRAMS

Report of Subcommittee IV

INTRODUCTION

The purpose of this subcommittee is to suggest what the mission and objectives of a DoD program to support the information requirements of the R&D managers, scientists and engineers of DoD and its contractors could or should be over the next several years. To do so, it is necessary that we consider our present level of knowledge in the information transfer process, current DoD practices to facilitate the transfer and utilization of information in the R&D planning-generation-transfer-utilization cycle and then what might or should be done, if anything, to improve this process.

The scientific and technical information generated constitutes the principal result of the DoD R&D investment of approximately $9 billion annually. The primary reason DoD management is concerned about the information transfer within DoD is that the generation of new science and technology proceeds from a base of previously generated information. Information costs are a small percentage of the cost of performing scientific and technical work. Thus, the effectiveness of current and future work depends upon the efficiency of the information transfer and utilization process. Of particular interest to DoD management should be the high leverage that improvements in information transfer and utilization offer for helping to offset the decline in resources allocated to DoD R&D.

The findings of this study, combined with the personal observations of the Committee members, all of the information service practitioners interacting on a daily basis with a wide cross-section of DoD managers, scientists and engineers, clearly indicate that there is substantial opportunity for DoD to effect specific improvements in its approach to information transfer and utilization. Appreciable cost savings, as well as significant benefits in terms of improved quality and timeliness of R&D outputs, could be obtained through less fragmentation and improved coordination of the formal information transfer functions within DoD. Although some segments of DoD have taken advantage

of modern methods of information collection, processing, retrieval, analysis and dissemination, as a whole there appear to have been inadequate efforts toward achieving standardization, convertibility and transferability of successful methods and techniques of information transfer.

INVESTIGATION AND FINDINGS

Members of the subcommittee conducted studies within their own organizations in the hope that these would help to qualify, if not quantify, overlooked needs for new or reoriented information services within DoD. These studies took the form of informal staff interviews and review of previously documented reference inquiries received, review of existing and projected technology applicable to the provision of information services and an attempt to identify the range of DoD-generated information users and their unique needs and problems.

The analysis points to the following major problem areas:

1. Lack of familiarity with available DoD and DDC information services.
2. Restrictions on access to information.
3. Information technology
4. DoD and DDC information services.
5. Need for a comprehensive, coordinated information program.

Each of these problem areas is considered in depth as background for the specific proposals of Section III.

Education and Communication

Present information transfer processes within DoD are poorly understood and utilized. A user communication gap, manifested by a lack of awareness of or familiarity with existing DoD/DDC services exists as shown by findings of other subcommittees. An even more critical communication gap is believed to exist between users and other information transfer nodes within DoD. Mechanisms for correcting this situation should be established before new services, products and techniques are introduced.

Prerequisite to full utilization of DoD information resources is an understanding of the overall organization and procedures for management of defense programs. In the flow proceeding from conceptualization to implementation and use of equipment and systems, there is a progressive development of intelligence,

planning, management, scientific, technical and logistics support information, data and documentation, any one of which may be needed at some point in the R&D process. To seek out information intelligently, it is necessary to understand the alternative stages and forms in which useful information might have been generated.

With the present hit-and-miss techniques, it may well be many years before librarians and other information purveyors acquire working familiarity with the special vagaries in the management of Army, Navy, and Air Force programs, the types of information and documents produced at each stage of program development, and the unique avenues for identifying and acquiring information generated in each stage. Conclusive evidence of this ignorance can be found in the successful marketing of high priced, defense-related reference directories and information services by commercial firms which have been quick to perceive and exploit the need.

While formal training and previous job experience external to DoD community may provide librarians with adequate background for utilizing traditional information sources, it does not equip them to handle the complex and poorly coordinated maze of information sources within DoD. Furthermore, it is apparent from questions addressed to libraries that program planners, managers, engineers and scientists are equally uninformed. Experience shows that program sponsors and others in the control chain may also share this ignorance; they may, in a misguided attempt to guard security, move to block access to information.

In view of this situation, this subcommittee believes that DoD should give priority to educational programs and to improving channels for communicating knowledge about information sources and services available under its own auspices. Since the end users' primary responsibility is not and cannot be to master such knowledge, their interests could well be served by the further development of librarians, by whatever name, into highly proficient gatekeepers, or mental storehouses, respecting the generation and utilization of information within DoD. The high overhead costs of maintaining DoD and DoD contractor libraries cannot be fully recovered until these units are able to respond and interact dynamically as integral parts of the R&D process. Effective programs of training and communication would immeasurably increase their capability of functioning at higher, more visible levels in the organizational hierarchy to accomplish improved information transfer.

Access Restrictions

If to be aware of DoD-generated information is important to the information transfer process, so is the ability to acquire that same information. Official policy is to provide greater access to DoD-generated information to both the civilian sector and the defense community; however, the actuality has been that many times information is withheld from normal announcement channels. A search of the DDC collection does not present a total picture of documented DoD-generated information. Round-about methods must be used, e.g., searching the Work Unit Information System and requesting documentation of the performing organization -- procedures often not very time- or cost-effective.

A revised DoD Directive 5200.20 will soon be issued, providing a new distribution statement which will assist the DoD contractors. It is understood that DoD believes that no unclassified DoD-generated information need bear a more restrictive statement than USGO. This subcommittee feels that most DoD organizations are unaware of the DoD position. Consequently, many unclassified technical reports are withheld from the normal announcement channels and are issued by originating organizations in "informal" or "internal" reporting formats. DoD should consider including in the DoD Directive 5200.20 a positive statement of its position and the necessary steps to ensure that this position is understood within the DoD community.

Simply stated, there are two types of restrictions placed on the access to DoD-generated information: planned restriction and inadvertent restriction. Planned restrictions are easy to identify, e.g., security, distribution statements, need-to-know, etc. Although these restrict the accessibility and availability of information, they do not present insurmountable obstacles to obtaining it. They do not prevent a user from acquiring the information, they just create a delay. It is the unintentional or inadvertent restriction that is difficult to identify and surmount. Limited technical reports require, for release, approval by contracting office and/or originator. Often this responsibility is delegated to employees who have inadequate experience or who occupy positions not directly connected with the area concerned. This anonymous clerk or junior officer is sometimes impossible to bypass in the approving chain.

The identification and procurement of information is hindered by the many types of DoD publications not available in the DDC collection. Why so many different formats, report numbers, access points and procedures within the military establishment? The need for the directory How To Get It - A Guide to Defense-Related Documents, compiled by Regina Nellor of the Institute for Defense Analyses, with the assistance of the Committee on Information Hang-ups (AD-769 220), attests to the severity of the problem.

These constraints, some administrative, some technical, some involving methodology, some lack of education, all restrict the information transfer and utilization process.

DoD Directive 5100.38 charges DDC with the responsibility of acquiring all technical reports, with some exceptions, considered pertinent to the RDT&E effort and of providing timely response to requests for these reports. Those which fall within the public domain by being unclassified and unrestricted are transferred to NTIS for announcement and dissemination. DDC is a service organization for the needs of the DoD community. NTIS is not primarily a service-oriented organization. By law, NTIS must recover its operating costs; these costs are now being paid, in part, by DoD and DoD contractors purchasing DoD-sponsored technical reports. Rising NTIS pricing policies along with handling charges and processing delays are reflected in the higher price of the DoD R&D effort. If NTIS is unable to provide the DoD community with timely response to requests for DoD-sponsored technical reports at a reasonable price, then the announcement and dissemination of public access AD documents should be returned to DDC for DoD and its contractors. Why should DoD information generators be required to subscribe to the NTIS Government Reports Announcements (GRA) to be alerted to DoD-generated information in the public domain? Announcement could be made in both the DDC Technical Abstract Bulletin (TAB) and the NTIS GRA, providing for the DoD community one source for identifying DoD-generated technical information.

Information Technology Utilization

The belief of Subcommittee IV is that DoD, and particularly DDC, can benefit from applications of modern technology in improving and extending these services.

There are isolated examples of effective applications of computers, communications, and information technologies, but little evidence of coordination and transfer across DoD of such successful applications. A recurring theme of Committee and Subcommittee recommendations is the plea for coordination, cooperative efforts, single points of contact or centralized files of information about DoD information and data resources. The technology for such coalescence exists: computer storage of facts and references, transmission across geographic distances of the contents of the store, reproduction and distribution of products from the store. The mechanism or organization of responsibility for such a referral service needs to be established by DoD.

A specific area where resource sharing is needed and can be effective is in computer program documentation. Means for notifying the Defense community of the existence of programs and automated data systems of particular interest, and of the

characteristics of such systems, can foster sharing of such software with resulting savings in time and money. A DoD inventory of software can be tied into the projected GSA centralized registry of selected government software.

On more specific objectives: DoD should continue to work to improve microform technology. The Defense Department has long taken the lead in developing systems and equipment for microform applications, but has not succeeded in transferring the results from one segment of the Department to another, from one service to another. The lessons learned in using microforms for engineering drawings or for parts catalogs can be translated for applications in document distribution and information retrieval. Especially acute is the need to apply human engineering research in the area of microforms and readers for personal use by scientists and engineers.

DoD, and particularly DDC, should initiate cooperative efforts with the producers and users of DoD documents to share the load of input processing. DoD agencies and contractors can prepare documents in machine-readable form for direct transmission and storage in DDC files. Additional distribution in printed (human-readable) form is not affected by such preparation, but time and duplicative effort can be saved. Standards need to be developed to insure effective procedures, but the technology is possible and feasible.

Source indexing for documents to be input to DDC should also be initiated. Again, standards are necessary but the utility of this approach has been demonstrated in other settings. Libraries share cataloging of books, for example, through on-line access to files of cataloging data; defense information services can share descriptive cataloging and indexing by similar procedures and provisions. The sharing among DoD information resources and their users of input processing responsibilities can help to cut down the rate of rise of costs for the services and the users themselves.

The search capabilities for DoD information files, and in particular for the diverse files in DDC, need to be examined in light of technological advances. The present structure of DDC files, for example, and the characteristics of the software developed to manipulate those files, preclude the freedom of search strategies and techniques enjoyed by users of other data bases. The current systems should be examined and updated where economically feasible; any new storage and retrieval services should be designed using forefront state-of-the-art techniques.

As an example, one of the particular "wants" of DoD users is more effective abstracting of defense documents: the ability to search effectively on abstracts, the ability to look at abstracts first for selection purposes, and the printing out of abstracts

in their entirety in answer to searches. These requests are relatively easy to satisfy by minor adjustments to existing information services, and should be built into planning for any future services.

Longer-range planning in DDC should take advantage of projected advances in the technologies of information handling: advances in transmission and communications techniques, developments in computer hardware, improvements in software quality and programming aids, new microform equipment and systems, and the like. DoD must foster such technological advances, through direct support of relevant research and development activities and through timely application of the advances to meet operational and consumer service needs.

DoD and DDC Information Services

In addition to services connected with education, access and technology utilization, there are other services and products which would provide a more effective transfer of information to the DoD community. DDC has always been receptive to user needs, responsive to user suggestions and innovative in developing new services.

The networking of DoD-funded Information Analysis Centers (IACs) on the DDC on-line terminals has been suggested. This network could be extended to other open literature systems, e.g., Lockheed DIALOG, providing a connect capability through the DDC on-line terminal. Each user would pay for connect time in the same manner as if they had a direct on-line terminal. These on-line terminals could be placed in DCASR offices as has been suggested by DDC, but there are not enough DCASR offices to meet the need. DDC should consider re-opening DDC Reference Centers in areas not conveniently served by a DCASR office. Terminal use at both types of offices would be restricted to each user's FOIR with DDC. Terminals located in DCASR offices should be operated by DDC personnel, or directly by the registered user--not by DCASR personnel.

The use of facsimile transmission of entire reports should be considered as equipment and methods improve. Facsimile transmission is slow on present equipment (3 min./unclassified page; 6 min./classified page). With faster equipment facsimile use should be restricted to urgent requests and to reports of reasonable size. Copies should be charged to the NTIS Deposit Account at a charge higher than that for normal processing. Classified material would present some control problems, but these should not be insurmountable. These facsimile transmission units should be placed adjacent to DDC on-line terminals to provide maximum service at the lowest operating cost, particularly with classified on-line terminals and facsimile transmission equipment which can use the same cryptographic equipment.

On-line access to DDC files is restricted to the current six years for full display, the remaining coverage being identified by AD number only. Most terminal users have sets of TAB, but the AD numbers did not appear along the spine until February 1962. To identify those AD numbers older than six years a cumulative index to TAB for 1953-1960 is, and has been, a needed retrieval tool.

At present DDC has four data bases, three of which are available to on-line users. Lack of uniformity in these data bases is confusing. Why have more than one format for personal author or a project/task number? Why use different role numbers in each of these data bases to retrieve the same piece of information? How can DDC require consistency from the technical report originator for machine-readable formats when it cannot be consistent itself?

DoD Information Program

The statement of the mission of a DoD scientific and technical information program should include the concept of increasing the effectiveness of the R&D effort through the improved transfer and utilization of information in the planning-generation-transfer-utilization process. In the DoD information picture there is a lack of formal process of planning and coordination processes with which to specify, on a DoD-wide basis, the conditions or criteria for establishing or abolishing information resources, or the policies and standards for their operation, consistent with DoD R&D goals and accepted modern library and information science methodology and practices. A suggested mission statement with major and supportive goal areas for DoD information is shown schematically in Figure 1.

The mechanism for the establishment and management of a "vigorous, well-organized, throughly coordinated, comprehensive technical information program" has been provided by DoD Directive and Instruction. Through the years the direction of the DoD scientific and technical information program has diminished, and in some areas disappeared. The Directorate of Technical Information within DDR&E has become defunct, leaving the DoD information program, as well as DDC, without established policy direction. The quality of DoD technical documentation has been reduced. It is easier and more economical to re-invent the wheel than to conduct a state-of-the-art survey. Technical libraries and information centers in DoD generally are administratively based in non-R&D functions and often occupy a position too low in the management hierarchy thus obscuring their visibility as an R&D resource. To achieve and maintain the responsiveness of DoD information transfer components to the requirements of the DoD R&D planning-generation-transfer-utilization process and to facilitate their effective utilization, it is essential that they become part of the R&D organizational structure.

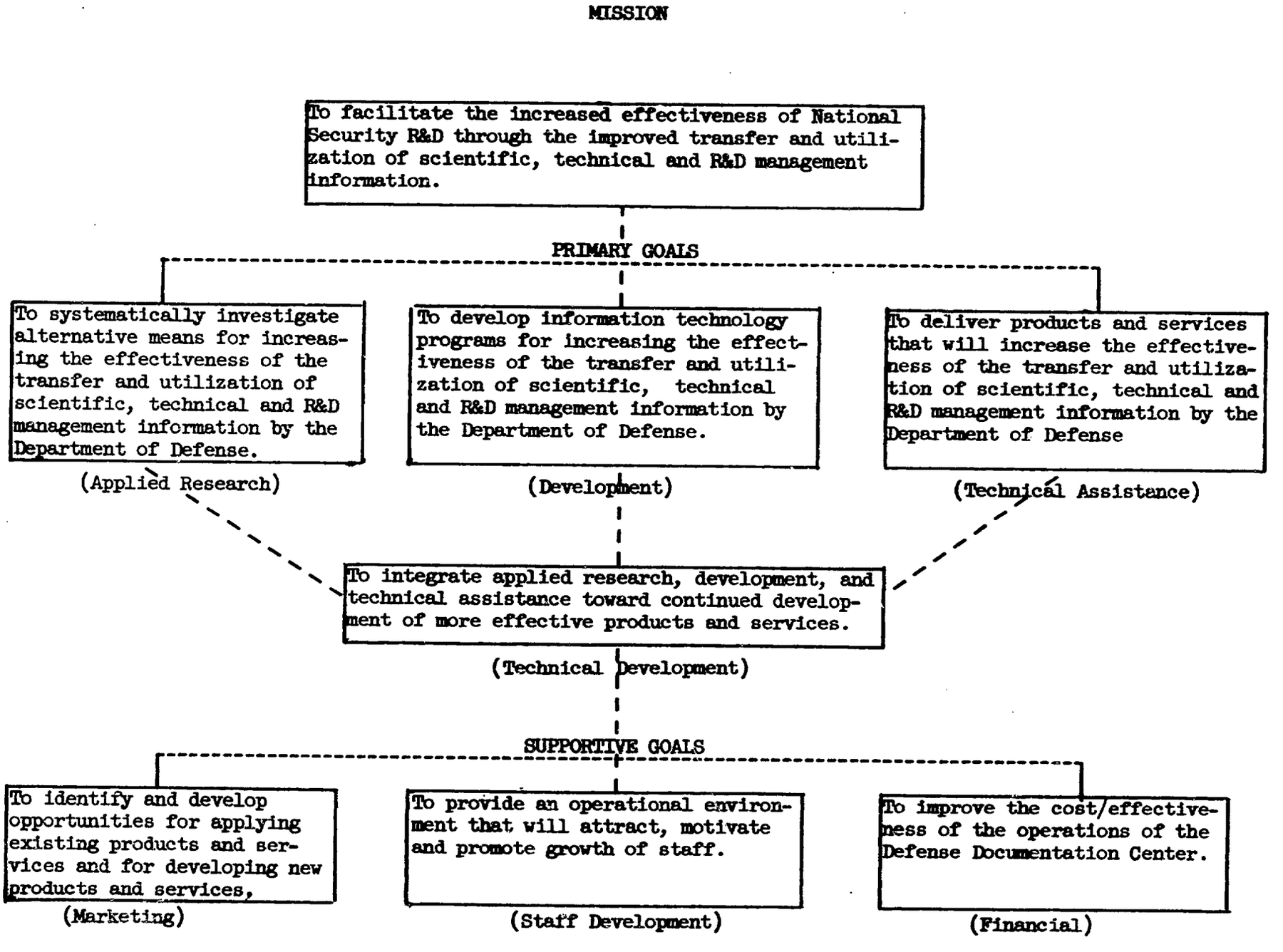

MISSION
To facilitate the increased effectiveness of National Security R&D through the improved transfer and utilization of scientific, technical and R&D management information.
PRIMARY GOALS
To systematically investigate alternative means for increasing the effectiveness of the transfer and utilization of scientific, technical and R&D management information by the Department of Defense.
(Applied Research)
To develop information technology programs for increasing the effectiveness of the transfer and utilization of scientific, technical and R&D management information by the Department of Defense.
(Development)
To deliver products and services that will increase the effectiveness of the transfer and utilization of scientific, technical and R&D management information by the Department of Defense
(Technical Assistance)
To integrate applied research, development, and technical assistance toward continued development of more effective products and services.
(Technical Development)
SUPPORTIVE GOALS
To identify and develop opportunities for applying existing products and services and for developing new products and services,
(Marketing)
To provide an operational environment that will attract, motivate and promote growth of staff.
(Staff Development)
To improve the cost/effectiveness of the operations of the Defense Documentation Center.
(Financial)

Figure 1

RECOMMENDATIONS

Each of the above problem areas needs to be studied in detail to build a comprehensive, coordinated DoD information program. They have been summarized in the following pages which list specific programs, services, products and techniques considered to be of value. Many of these suggestions could be made available immediately, others will take time to implement. However, this subcommittee recommends that DoD and DDC give priority in their long-range planning to the following specific proposals:

1. Implement, as soon as possible, the mechanisms provided under DoD Directive 5100.36 and DoD Instructions 5129.45 and 5100.38 to re-establish a management structure capable of addressing the problems associated with the development of an effective utilization of DoD information resources. It is important that this management structure be composed of information users and generators including librarians familiar with DoD-related information as well as information managers.

2. Establish an education program to provide orientation for new and incumbent DoD and DoD contractor librarians and to continue to alert these librarians to new services, products and procedures available within DoD as well as DDC. DoD must take a more positive, dynamic approach by going to the user rather than passively providing training if requested. DDC Regional Users Groups would be more responsive to DoD/DDC problems if their meetings were attended by DDC representatives.

3. Withdraw from NTIS the announcement and dissemination to the DoD community of AD numbered reports and transfer these functions to DDC. NTIS would continue to announce and disseminate AD reports to the non-DoD community.

4. Re-establish DDC Reference Centers to provide more efficient information transfer and utilization to the DoD community outside the local area.

SUMMARY OF SERVICES AND RECOMMENDATIONS

DoD Information Management Training School

DoD should establish a school to provide systematic training in available DoD information services and sources within the context of DoD program management and the problems which must be solved in the execution of these programs. The widespread lack of familiarity with services, sources, procedures and techniques for acquiring information available within DoD indicates that no adequate means exist for providing that fundamental, working familiarity with DoD information channels.

The establishment of a school which would develop specialized, indepth courses in specific problem areas, use of special retrieval and reference services, etc., would help to provide more complete, timely and less costly information transfer and thereby help to offset the decline in resources allocated to defense R&D.

Continuing Education and Communication

DoD must establish a more effective on-going dialog between users and/or DoD information nodes. Information needs, sources, and acquisition procedures and techniques change constantly. Opportunities for direct communication among those involved in the DoD information transfer process are inadequate. Newsletters and digests issued by information centers provide fragmented news to an only partially identified clientele. Some channels are needed for updating knowledge acquired in basic training programs and providing a continuing forum for discussion of problems, exchanging expertise and presenting new developments.

Regional User Groups outside the Washington, D.C. area need to have more direct contact with DoD, DDC, and NTIS representatives. As a long term program, DoD should foster development of a Defense Information Society to provide direct communication between DoD and contractor librarians and personnel in defense-related information centers, clearinghouses, document supply centers, industry/government liaison centers, etc. DoD should also promote technical meetings and seminars and initiate a bulletin to serve as a vehicle for written communication among members of the society.

Referral Services

DDC's present referral service is relatively undeveloped, unknown and unused. DDC should build a comprehensive, up-to-date store of knowledge about defense-oriented information sources that can be consulted as needed to fill in memory or knowledge gaps. This store of knowledge should provide a central point of contact for leads to specific sources of information that have been forgotten or not yet discovered.

DDC should develop a more complete, mechanized data bank of DoD information sources and services. Experts should be available to answer written or telephone inquiries about DoD-wide sources. From this data base and these experts DDC can prepare special application directories, data compilations, and information guides.

DDC should coordinate efforts with the National Referral Center and establish a network therewith. On-line access to that network should be made available to DDC users. Inquiries to the referral services should be analyzed to identify areas requiring additional training and education, and areas for new or improved services.

DoD Language Dictionaries

DoD directives and reports contain jargon, abbreviations, acronyms and codes, projects, facilities, commands, equipment system designations. DoD should build and maintain a comprehensive and up-to-date machine-readable dictionary which permits translation in both directions. Eventually this should be put on-line. Special segments should be published. Channels should be established for answering inquiries about new or missing codes.

Networking

To reduce unnecessary duplication of costly resources, to cut costs, and to expand services DDC should cooperate with DoD and with other information services in exploring capabilities and needs for networking technology. Studies of users' needs for and availability of information resources will help to facilitate sharing of such resources. Network planning should be included as an integral part of planned changes in management functions or in the service function itself.

Terminal Technology

Efficient computer resources are too costly for many users, and too remote for some. To bring computer services to the user and to facilitate interaction with computer capabilities DDC should keep abreast of the state-of-the-art in terminal technology, design characteristic, capabilities, and costs of various types of computer terminals. DDC should also include planning for networking, resource sharing and teleprocessing, and support development of common access procedures between users and networks.

Transmission Techniques

Current costs and unreliability of data transmission facilities cause problems for users. Use of emerging technologies to facilitate data transmission would also increase the efficiency and reduce the cost of transmission.

DDC must remain aware of developments in high-speed data transmission as they relate to DDC/DoD information handling activities, and should support innovative developments and new technologies when possible.

Facsimile Transmission

The need to transmit information accurately and quickly is a constant pressure in the field of information transfer. DDC should work to improve its facsimile transmission techniques, to incorporate new technology into their present system and to project applications of innovations in facsimile systems.

Microrecording Technology

The expense of storing large amounts of textual material can be prohibitive. Users of microforms can reduce storage costs, increase efficiency in storage of files of materials, replace materials subject to shortages in supply, facilitate use of really large numbers of documents and improve our ability to add to or delete from large stores of material. As a major user and distributor of microforms, DDC should support research into the human engineering aspects of microform technology, and consider supporting innovative developments and the diffusion of such developments in DoD document handling activities.

Standards for ADP and Information Processing

The absence of coordinated standards for ADP and information processing within the DoD community is costly and creates difficulties for those who must access different files or systems. DDC should lead the effort to share resources, reduce inefficiency, reduce the number of incompatibilities and enhance coordinated development in information processing. Both DoD as a whole, and DDC in particular should survey existing standards and determine the extent of compliance and/or problems with those standards. DDC should initiate, foster and encourage the development of needed standards and should push for the implementation of those standards in DDC and DoD as applicable.

Other DDC Services

The DDC Central Registry (FOIR) should be used as a list of interest profiles for current users. Use of this file as a guide for primary distribution of DoD-funded reports would permit more efficient distribution of those reports with a subsequent saving in time and money.

The 1950s produced very good fundamental DoD-funded research. DDC should survey its user community and, if a demand exists, produce a TAB cumulative index for 1953-1960 at a suggested price of $300-$400. The information needed to produce this index is already available on computers, and the index should reduce the number of requests to DDC for demand bibliographies and permit more efficient retrospective searching.

DDC should also produce a TAB cumulative index for 1960-1969. The information for this index is already available as the magnetic tape, "R&D in the 60s."

The technical report data bank and the WUIS data bank should be linked and cross-references programmed so that a WUIS/Report number link is produced when either data bank is queried. Project numbers and/or task numbers can provide the common indexing point. Such a program would save time in locating reports related to WUIS data.

DDC should acquire DoD Planning Documents other than DD 1634s. Submission of planning documents to DDC by the services and major commands would facilitate in-house planning, stimulate ideas within DoD and make for more efficient in-house projects. Access to these planning documents could be carefully controlled and restricted within a given service or command.

Reclassification of material within a library collection is a constant problem. In addition to publishing a reclassification list in each issue of TAB, DDC should publish a yearly cumulative reclassification list. This publication should list, by AD number and by report number, all changes in limitation, classification and/or distribution statements made to AD-numbered documents during the preceding year.

Registered users of DDC should have access to all AD-numbered documents through DDC and should not have to request this material from NTIS. The 2 to 4 week delay at NTIS on orders for older material and a $5-10 charge for "quick" service cost DoD money both in delay time and budget.

DDC should expand its program of user training. The training program should include librarians, information specialists and users of all kinds as well as contract officers and releasing agents. Training sessions should be held at DDC and on the road and training material should be written by DoD information users.

Consideration should be given to establishing a government-wide IR&D data base. Much of the DoD in-house IR&D is very obscure and the establishment of a government-wide base would provide the researcher with a shopper's guide to IR&D planning.

DDC should include the abstracts from DD 1473s as searchable items in the technical report data base. These abstracts should not just summarize the documents to which they refer, but should be informative about those documents.

A program should be established, under DDC's direction, for indexing by the originating organization, reports submitted to DDC. The subject analysis of technical reports by DDC staff is sometimes too broad for accurate retrieval. Staff within the originating organization, trained by DDC, would be able to apply more precise indexing terms to the documents produced by that organization.

In addition to establishing an indexing network with producers of technical reports, DDC should work toward establishing a network with the DoD-sponsored Information Analysis Centers. An interactive DDC-IAC network would insure detailed and accurate subject indexing of technical reports and would make the information in the IAC data bases more available to the DoD community.

DDC ought to give consideration to establishing regional reference centers. Mail is often too slow and most users don't have access to on-line terminals. Establishment of DDC Reference Centers with on-line terminals should reduce R&D costs by bringing information closer to the users in less time.

Technical reports should be submitted to DDC in machine-readable format. Many DoD organizations already have facsimile transmission equipment in-house. An experimental program with these organizations could be established to determine if submission of reports in machine-readable format results in the expected savings in time, increase in quality of facsimile transmission or standardization of input.

A report citation index might be a valuable by-product of machine-readable input. Science Citation Index has shown the need for this type of index and a data base of references to reports cited in reports accessioned by DDC would be a useful retrieval tool.

DDC should begin planning to provide primary distribution of documents in microfiche. Not all addressees on a distribution list require hard copy and the distribution of microfiche would reduce paper and mailing costs. Producers of technical reports could submit camera copies of their reports to DDC, along with requirements for numbers of microfiche to be distributed and lists of addressees. Charge for microfiche should be more than 95¢ per document.

CONCLUSION

This report identifies problems and makes recommendations in four areas, as follows:

PROBLEMS

For DDC

There is a DDC-user communication gap. Many users are unaware of all but the most basic services offered by DDC. Even those who are aware of available services make limited and narrow use of them.

There is no real enforcement mechanism to insure 100% input to the Work Unit Information System (DD 1498).

NTIS is unable to provide the DoD community with timely response to requests for DoD sponsored technical reports at a reasonable price.

DDC data bases lack uniformity and are weakened by a lack of cross references.

For DoD

Present information transfer processes within DoD are poorly understood and utilized.

Through the years the direction and quality of the DoD scientific and technical information program has diminished, and in some areas disappeared.

Security classification does present some problems in the flow of information. Access controls are often exercised by low-echelon personnel who do not have the necessary expertise or experience to exercise sound judgement.

Distribution limitation statements are often used as substitutes for security controls.

For the Federal Government

Interagency coordination of information programs appears to be very low.

For the User

There is a DDC-user communication gap. Users are failing to take advantage of the wide range of information resources and sophisticated technology available to them. Many users do not know of the existence of specialized information services such as the DD 1498 and DD 1634 data banks at DDC.

Users have difficulty attaching a value to a service they receive, either in terms of time saved or money spent.

User charges have effectively lessened the flow of government information to libraries and end users.

RECOMMENDATIONS

For DDC

The Defense Documentation Center, in planning future service to users, should give major attention to directing the flow of information from the Center to the formal units within an organization (e.g., libraries) that store and make information available.

DDC, and similar information clearinghouses should consider themselves in the same category as publishers, the major part of whose business is with jobbers and other bulk purchasers - direct sales to the reader being of minor importance. DDC should consider the library as its first and most important customer.

DDC should improve and expand existing services, to wit:

1. Develop a more complete, mechanized data bank of DoD information sources and services.

2. Establish an office staffed with experts to answer written or telephone inquiries about DoD-wide sources.

3. Publish retropective, cumulative indexes for the periods 1953-1960 and 1960-1969.

4. Link common indexing points in the WUIS and Technical Reports data bases and provide cross references.

5. Use the Central Registry (FOIR) as a list of current users for primary distribution of DoD-funded reports.

6. Acquire long-range planning documents issued by DoD activities.

7. Provide an annual index, by report series and AD number, of reports downgraded, delimited or declassified.

8. Distribute all AD numbered reports to the Defense community; and announce all AD numbered reports in TAB. NTIS should not be the Defense community's main source for DoD-funded research reports.

9. Issue a citation index to reports listed in TAB.

10. Produce a comprehensive Acronym Dictionary and place it on-line.

11. Reestablish Regional Reference Centers and place on-line terminals in them. Establish procedures for use by registered users.

12. Investigate the possibility of primary distribution of reports in microfiche by DDC.

13. Include project names and identifiers in the printed indexes.

14. Include "L" documents in the ADD program.

15. Review, and revise as necessary, all Current Awareness profiles.

16. Issue a Users Manual as a guide to DDC services. Issue supplemental fact sheets on each service offered.

17. Require 100% input to the DD 1498 and DD 1634 data bases.

Half of DDC's effort should be spent in improving the present system; the other half in expanding into experimental programs.

DDC would do well, in cooperation with the rest of DoD, to establish a coordinated program of continuing education of, and communication with, DoD and DoD-contractor librarians and information officers.

DDC must include advances in technology in its long-range planning. A program to combine the benefits of the services offered by DDC and the Information Analysis Centers should be implemented. This should be the first step in the creation of a network of DoD information services.

Consideration should be given to establishing a network with non-DoD information services (NASA, AEC, etc.). To that end, DDC should support the development of common acces procedures between users and networks.

DDS should support, as needed, innovative developments in DoD document handling procedures, including new developments in microrecording technology.

DDC should initiate, foster and encourage development of standards for ADP and information processing. As part of this program, DDC should begin a trial project of machine-readable format report submission.

DDC personnel and their user community together should attempt to influence policies governing the access controls which now hamper the flow of technical information.

For DoD

DoD must establish a comprehensive, coordinated information program. This program must have a management structure capable of addressing the problems associated with the development of an effective utilization of DoD information resources.

In cooperation with DDC, DoD should establish a program for the continuing education of, and communication with, DoD and DoD-contractor librarians and information officers. To accomplish this DoD should:

1. Establish a DoD Information Management Training School.

2. Foster the development of Regional User Groups outside the Washington, D.C. area.

3. Foster development of a Defense Information Society.

4. Promote technical meetings and seminars.

5. Initiate a bulletin to serve as a vehicle for communication between members of the DoD information community.

DoD must foster the development and use of technological advances of interest to the information handling community.

For the Federal Government

Consideration should be given to the creation of a high-level office in the Executive Branch which would have the complete backing of the Congress and which would be responsible for policy direction of an over-all federal scientific and technical information program.

An effort should be made to coordinate the development of DDC and the rest of the DoD information community with the efforts of the National Commission on Libraries and Information Science. Providing this kind of link in the emerging national network would result in an efficient and economical transfer of unclassified R&D results to industry and the American public.

For the User

The user community must work with DDC to influence the policies governing the flow of scientific and technical information.

Users must take an active part in developing and influencing the development of information policies.

Users must learn to communicate with the agencies which provide information services.

Users must lobby for congressional and executive branch backing for a coordinated DoD and Federal information program.

Appendix A

LIST OF PARTICIPANTS

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Appendix B

AUTOMATIC DOCUMENT DISTRIBUTION (ADD)

Questionnaire

1. Are you still a recipient of the ADD service?

   Yes - 45
   No - 8

2. How many fields do you receive documents in?

   Average - 11 fields (not a reliable number)

3. What are they?

   (Responses not recordable.)

4. How is ADD used most frequently in your library?

   Current awareness - 17
   Build up collection in a particular area - 29
   Other - 11
   Quick response to requests
   DDC terminal backup - 3

5. What is the average cost of the service per month?

0-10 -- 7	Over 500 -- 3
11-100 -- 15	Free -- 10
101-500 -- 5	No response -- 4

6. Is it worth the cost?

   Yes - 31
   No - 1 (This is one of the eight who indicated they do not receive ADD.)

7. Is billing a problem?

   Yes - 0
   No - 33

8. Is the distribution schedule satisfactory?

   Yes - 45
   No - 0

9. Has ADD had any effect on your ordering?

   Yes - 27
   No - 17

10. Does the service actually save time?

    Yes - 38
    Saved selection/ordering time (4 hours per month) - 4
    Scan TAB only for "L" documents - 2
    Easier to retrieve MF than hard-copy
    No - 5

11. Are the field descriptors satisfactory for indicating your subject areas?

    Yes - 28
    No - 11
    If not, are they:
    Too generalized - 7
    Too specific - 0

12. Do you screen the documents received on ADD?

    Yes - 26
    No - 18

13. What percentage of the ADD documents are added to your permanent collection?

100% - 25	20-49% - 4
80-99% - 10	Less than 20% - 1
50-79% - 5	

14. Would you recommend that this service be broadened to include more users?

    Yes - 27
    No - 8

15. Additional comments:

    a. With an ADD subscription, the material is available when requested, not 2-3 weeks later - 8
    b. ADD provides coverage in areas where none existed.

c. Would like to be able to receive "L" documents automatically. - 6
d. DDC should make primary distribution in MF form.
e. In trying to revise ADD profile, no assistance, no referrals, no response. Need better description of options available in the ADD program.

Appendix C

AUTOMATIC MAGNETIC TAPE DISTRIBUTION (AMTD)

Questionnaire

1. Do you receive the TAB Magnetic Tape?

   Yes - 3
   Yes, but have not used yet - 1
   No - 3

2. How is the TAB Magnetic Tape used most frequently in your library? (Rank 1, 2, 3, etc. with 1 indicating most usage.)

   Current awareness - 2, 1, 1
   Identification of specific reports - 2
   Indexing of reports - 4
   Subject searches - 1, 3
   Verification of bibliographic information - 5

3. Do you receive the printed TAB?

   Yes - 4
   No - 1

4. How is the printed TAB used most frequently in your library? (Rank 1, 2, etc. with 1 indicating most usage.)

   Current awareness - 4
   Identification of specific reports - 1, 2, 3, 2
   Indexing of reports - 5
   Subject searches - 3, 2, 3
   Verification of bibliographic information - 2, 1, 1, 1

5. In each area, which receives the heaviest usage, printed TAB or the TAB Magnetic Tape?

   Current awareness
   Printed TAB - 0
   TAB Tape - 2
   Identification of specific reports
   Printed TAB - 2
   TAB Tape - 0
   Indexing of reports
   Printed TAB - 1
   TAB Tape - 0
   Subject searches
   Printed TAB - 2
   TAB Tape - 1
   Verification of bibliographic information
   Printed TAB - 2
   TAB Tape - 0

6. Have you observed differences between the printed TAB and the TAB Tape?

   Yes - 2
   No - 1

   a. If yes, what types of differences?

      1) The Tape contains unlimited documents in our subject areas.
      2) Tape contains identifiers TAB does not.
      3) The "L" on limited AD numbers does not appear on the tape and must be supplied by our program.

   b. How often have you observed differences?

      Always - 1
      Sometimes - 0
      Never - 0

7. Is TAB Magnetic Tape service worth the cost to you?

   Yes - 2
   Maybe- 1
   No - 0

   Please explain: The magnetic tape service is always subject to justification. We are not satisfied entirely with the service it provides.

8. Is the distribution schedule for the TAB Magnetic Tape satisfactory?

   Yes - 2
   Most of the time - 1
   No - 0

   Please explain: We have some problems with late delivery.

9. Additional comments: We would prefer to receive tapes which have all the descriptors intact. Many classified descriptor groups are deleted from the records before they are sent out. Searching what is left is not adequate since many good reports are not picked up. It would be better to allow us to do the stripping after searching than to have it done before we get the tape.

Appendix D

CURRENT AWARENESS (CA)

Questionnaire

1. Are you still a recipient of CA?

   Yes - 28
   No - 4

2. How is CA used most frequently in your organization?

   Keep abreast of current research - 18
   Acquisition tool - 1

3. How many people, within your organization, are using this service?

   Number varies from 1 to 45, with 4 making no reply.

4. How often do they receive the material (bibliography)?

   Weekly - 0
   Semimonthly - 17
   Monthly - 2
   Bimonthly - 1
   Irregularly - 8

5. Is the distribution schedule satisfactory?

   Yes - 22
   No - 1
   No comment - 5

6. Is your profile accurate?

   Yes - 22
   No - 6

   If not, please explain: Haven't tried to change the profile.

7. Have you made any effort to change it?

   Yes - 6
   No - 18

8. What percentage of reports are requested from an average bibliography?

   Ranged from 0 to 17%.

9. Of that percentage, how many are received?

   Receipts ranged from 0 to 100% by 6 users.

10. How would you rate the effectiveness of CA as compared to other sources?

    Very effective - 6
    Effective - 15
    Less effective - 4
    No reply - 3

11. A. Is CA a primary source of information?

    Yes - 10
    No - 18

    B. Is it a secondary source of information?

    Yes - 20
    No - 3
    No reply - 5

12. Would you be willing to pay for this service?

    Yes - 14
    No - 11
    No reply - 3

Appendix E

TECHNICAL ABSTRACT BULLETIN (TAB)

Questionnaire

1. Please indicate the type of organization you represent.

   U.S. Government agency - 8
   Dept.of Defense contractor - 9
   Military installation - 11
   Other - 5 do not receive TAB

2. How many copies of TAB are received by your organization?

   0-5 -- 20
   6-10 -- 5
   11-15 -- 0
   16-20 -- 2
   Over 20 -- 1

3. How is TAB most frequently used in your organization? (Rank 1, 2, 3, etc. with 1 indicating most use.)

   24 users replied:

   As a report cataloging aid - 5
   Current awareness announcements - 3
   Identification of specific reports via AD number, title, etc. - 1
   Subject searches, compiling bibliographies, etc. - 4
   Verification of bibliographic information prior to placing orders - 2
   Other - no responses

4. Which section of TAB is used most frequently in your library? (Rank 1, 2, 3, etc.)

   19 users replied:

   Cumulated indexes - 1
   Semimonthly announcement bulletin - 2
   Semimonthly index - 3
   Other - no responses

5. Do you bind TAB?

   Yes - 7
   No - 21

   Would a pre-bound set available from DDC be desirable?

   Yes - 12
   No - 15

   Comments:
   1) Little retrospective use.
   2) Would buy if the price was reasonable.

6. Is the TAB publication schedule satisfactory, i.e., timely?

   A. For the announcement bulletin?

      Yes - 25
      No - 1

   B. For the Indexes?

      Yes - 24
      No - 1

   Comments: Four colors preferred.

7. Have you noticed differences between TAB and DDC literature searches (e.g., some citations in searches, but not in TAB, or more complete citations in searches, etc.)?

   Yes - 12
   No - 10

   Comments:
   1) This is why we get searches.
   2) Use TELEX instead of DDC literature searches. (Have extensive ADD profile.)

8. Has the classification of TAB changed its use in your installation as a retrieval tool?

   Yes - 14
   No - 14

   As a "current awareness" tool?

   Yes - 14
   No - 12

9. Would you be willing to accept less information in TAB (e.g., omission of abstracts or descriptors) as a trade-off if it could be de-classified?

   Yes - 5
   No - 22

Would you prefer to have more information (e.g., inclusion of all abstracts, classified titles, etc.) even if TAB had to be given a higher classification?

Yes - 13
No - 14

Have you any other suggestions for compromises on the classification level and amount of information?

Distribute both an unclassified and classified TAB - 2 responses.

10. Would you favor having all AD documents listed in TAB (rather than having the unlimited ones in GRI)?

Yes - 26
No - 2

Comment: This would eliminate checking two sets of publications.

11. On the whole, is the arrangement and general format of the semimonthly announcement bulletin satisfactory?

Yes - 24
No - 0

12. Does the main entry in the announcement bulletin contain sufficient information?

Yes - 28
No - 0

13. Is the grouping of main entries in the bulletin by COSATI categories a satisfactory method of arrangement?

Yes - 22
No - 6

Comment:
1) The categorization is too broad.
2) Changes in at least some of the fields/groups is in order.

14. Should the notices concerning changes in distribution, classification and availability be omitted from the announcement bulletin and published as a separate document?

Yes - 20
No - 7

Comment: An annual index would be appreciated.

Should these announcements be cumulated or other changes in format be made?

Yes - 22
No - 4

Comment: A semiannual issue would be useful.

15. Which index do you use most frequently? (Rank 1, 2, 3, etc.)

Corporate author/monitoring agency - 1
Contract number - 6
Personal author - 3
Report number - 2
Subject - 4
Release authority - 7
Title - 5
No difference - no responses

16. Are the arrangement and general format of the indexes satisfactory?

Yes - 28
No - 0

17. Should project names and/or identifiers be included in the index?

Yes - 22
No - 5

18. Does the lack of cross-references impede your use of the subject index?

Yes - 15
No - 8

Is the indexing terminology satisfactory for locating subjects?

Yes - 17
No - 10

19. Do the indexes offer enough access points for retrieving information?

Yes - 25
No - 3

If not, what additional access points would you recommend?

Project numbers.

20. Would the declassification of the report number or contract number indexes be helpful?

Yes - 15
No - 13

21. Do you receive TAB on magnetic tape?

Yes - 1
No - 27

If not, why not?
1) Not aware of service.
2) No computer services available.

22. Do you receive from DDC the ADD (Automatic Document Distribution) service?

Yes - 8
No - 19

If not, why not?
1) Too many limited documents.
2) Not aware of profile nuances.
3) Not aware of service.

23. Do you receive DDC Current Awareness Bibliographies?

Yes - 7
No - 21

If not, why not?
1) Not aware of service.
2) Subject categories are too general.
3) Still awaiting the first shipment (profiles were set up some time ago)
4) Can't afford it.

Appendix F

DEFENSE RDT&E ON-LINE SYSTEM

Questionnaire

1. Is your site classified or unclassified?

   Classified - 12
   Unclassified - 3

2. How long has you terminal been operational?

   Average - 1.4 years
   Median - 1 year
   Range - 2 months to 6 years

3. Do you have a designated operator(s)?

   Yes - 14
   No - 1

   a. What percentage of each operator's time involves some facet of the on-line system?

      Operator 1 - 31%
      Operator 2 - 13%
      Operator 3 - 8%

   b. How long has each operator been associated with the on-line system?

      Operator 1 - 1.4 years average (Range: 2 months to 6 years)
      Operator 2 - 1 year average (Range: 2 months to 2 years)
      Operator 3 - 1 year average (Range: ½ to 2 years)

4. Does the operator feel at ease in using the terminal?

   Yes - 13
   No - 2

5. Rank the data banks according to frequency of use (1 highest, 2 next, etc.)

   Current - 3
   DD 1473 - 1
   DD 1498 - 2
   DD 1634 - 4
   Pandex - 5

6. Rank the type of use made of the terminal (1 equals most frequent, 2 next, etc.)

   Display single known accession numbers - 5
   Multilevel search - 1
   Multilevel search using more than 1 search role code - 2
   Ordering technical reports (AD numbered documents) - 3
   Single level search - 3

7. Approximately how many batches do you submit per month?

Average - 13.5
Median - 10
Range - 0 to 45

8. How does the user generally feel about search responses (please give percentages)?

Extremely valuable - 22%
Valuable - 35%
Satisfactory - 33%
Unsatisfactory - 9%

9. Rank the following terminal aids (consider 1 to be extremely useful and 6 to be useless). If you feel these products can be improved, indicate how you think they ought to be improved.

a. Rankings (Responses have been averaged)

DRIT - 1.8
DRIT Hierarchy - 3.4
Source Header List - 3
Source Hierarcy - 3
Combined Frequency Count - 2.3
Revised Operating Instructions - 2

b. Frequency of Use

1) DRIT
Often - 15
Sometimes - 0
Rarely - 0
2) DRIT Hierarchy
Often - 2
Sometimes - 8
Rarely - 3
3) Source Header List
Often - 5
Sometimes - 9
Rarely - 0
4) Source Hierarchy
Often - 4
Sometimes - 9
Rarely - 1
5) Combined Frequency Count
Often - 4
Sometimes - 5
Rarely - 3
6) Revised Operating Instructions
Often - 9
Sometimes - 3
Rarely - 1

10. Are there any fields which you would like to be able to search but cannot?

No - 8
Yes - 7

If yes, list display field numbers. (Only 2 or more responses are listed.)

a. DD 1473 data bank
Field 6 - 4 responses
Field 7 - 2 responses

b. DD 1498 data bank
Field 13 - 2 responses
Field 15A - 2 responses
Field 15B - 2 responses

c. DD 1634 data bank
(no responses)

d. Current data bank
(no responses)

11. Are there any fields which you can search but do not need?

No - 10
Yes - 5

If yes, list search numbers.

a. DD 1473 data bank
(no responses)

b. DD 1498 data bank
Field 49 - 2 responses
Field 25 - 2 responses
Field 51 - 2 responses
Field 23 - 2 responses
Field 35 - 2 responses
Field 14 - 2 responses
Field 22 - 2 responses
Field 34 - 2 responses
Field 13 - 2 responses
Field 32 - 2 responses

c. DD 1634 data bank
Field 31 - 2 responses

d. Current data bank
Field 52 - 2 responses

12. If you have a question regarding the Interim Operating Instructions, do you call DDC?

Yes - 14
No - 1

If yes, do you receive satisfactory replies to your questions?

Always - 8
Sometimes - 5
Never - 0

13. Has your ability to manipulate the data bases been affected by the change to DRIT (other than the loss of former search terms)?

Yes - 3
No - 12

14. What degree of confidence do you have, after running an exhaustive subject search, that you have in fact retrieved 90-95% of all the pertinent citations in the DDC data bank?

Sure - 7
Doubtful - 8
No confidence - 0

15. A) Are you aware of the over 300 WUIS, 8 DD 1634 and 1 DD 1473 off-line formats available to you when ordering batches?

Yes - 6
No - 7

B) Which do you use most frequently? (No responses received.)

16. Do you feel that DDC is doing a good job in keeping you posted on changes in regards to the on-line system?

Yes - 9
No - 6

17. If you have a hardware problem do you receive satisfactory action within an acceptable time?

A. Local hardware

Always - 9
Sometimes - 4
Never - 0

B. DDC housed hardware

Always - 8
Sometimes - 5
Never - 0

18. If you have a local hardware problem, does DDC cooperate with the local repair technician?

Always - 7
Sometimes - 7
Never - 0

19. Is on-line system down-time within acceptable limits?

Yes - 9
No - 6

If NO, what do you consider acceptable?

a. 10%
b. 5%
c. 3%
d. 1 unscheduled occurence per month
e. Lessthan 1 hour per day.

20. Do you feel your training to operate the terminal was adequate?

Yes - 9
No - 5

If NO, how can it be improved? (No responses received.)

21. Would periodic refresher sessions be useful?

Yes - 11
No - 3

22. Would a newsletter describing useful searching techniques be of value?

Yes - 14
No - 1

23. Are you aware of the design philosophy adhered to in arriving at the present on-line system?

Yes - 3
No - 14

24. List in order of priority any changes you would like to see in the on-line system.

a. Decrease the amount of downtime.
b. Make DRIT more responsive to needs.
c. Increase the flexibility and complexity of the Boolean Search Logic.
d. A newsletter.
e. Make a faster printer available.
f. Consistent assignment of numerical codes to like fields in all data bases.
g. Establish a user group committee to represent on-line users in the decision making process.
h. File maintenance program.

Appendix G

DOCUMENT SERVICES

Questionnaire

1. Please indicate the type of organization you represent:

   U.S. Government agency - 11
   Department of Defense contractor - 8
   Military installation - 5
   Other (specify) - 2

2. A) What problems do you have with the DDC Form 55?

   No problems - 12
   Very few problems - 1
   Don't use the form - 3
   Did not reply - 3
   Time consuming to type and process - 3

   Comments:

   1) Too complicated.
   2) Getting them back from cognizant codes where we route them for approval for release to requester and for approval for removing limitation. Time-consuming effort of maintaining tracer file.
   3) Releasing agency either fails to return form or does not expedite.
   4) The agency has to fill out a Form 55 for those documents controlled by the agency.
   5) Releasing agency decision takes too long.
   6) It takes forever to get a document. Even getting notification from DDC that a document is controlled takes a long time.
   7) No problem with the Form 55 itself, but there are too many "L" documents. Also, the distribution and availability changes are too numerous to keep up with.

   B) Greater efforts to discourage use of the limitation statements.

   1) Include "distribution and availability changes" in the next "Release Authority Index" or issue a separate, indefinitely cumulative index of these changes.
   2) Reorganize DDC and clarify the limitation statements and limit their applicability, especially within DoD, and use.
   3) Phone verification should be acceptable.
   4) If the requester is the controlling office, Form 1 should suffice.
   5) I do not have a solution. A more realistic time limit than 15 days might help to reduce the paper work.
   6) Add attention line to address of releasing agency.
   7) Preprinted information (which we do on our forms because we do not use DDC supplied forms, we get our own made up). Let users order by AD number only, the same way classified is ordered. DDC could use a data base of their information needed on limited and have it read out on a form there if necessary. Then normal ordering could take place.
   8) Make DoD liaisons in DDC responsible for approving release of documents.

   C) Do you have any other problems with DDC forms?

   Yes - 6
   No - 15

   Yes explained:

   1) DDC Form 1 needs to be redesigned for better use of the space on the card, especially on the reverse side where documents are ordered by other than the report number. Getting approval of registered user status - Form 1540; no one ever seems to know what I'm talking about when I try to locate someone authorized to sign for us.
   2) The copy of the Form 55 which DDC sends with the tracers is very often not legible and sometimes it is not attached at all. Having a legible copy of the Form 55 helps in the tracing procedure.
   3) Several releasing agencies will not approve release with out certification of need-to-know.
   4) Some requests are never answered.

5) Wrong material was sent.

3. A) Do you use TELEX or TWX for ordering DDC documents?

TELEX: Yes - 2 No - 21
TWX: Yes - 1 No - 22

B) What percentage of reports are ordered via TELEX or TWX?

1) 60% from DDC and NTIS.
2) All to DDC. Do not use for orders anywhere else?

C) Are there more or less errors in TELEX or TWX orders?

1) Have not reviewed process. Numerical errors.
2) I would not call it RUSH handling. The process is time consuming and full of details. Too many chances for something to go wrong, and it does more often than would be liked.

4. If you use TELES would the use of a telefacsimile machine minimize errors in the transmission of orders?

Yes - 1 No - 2

5. A) Do you have any complaints regarding the handling of rush orders?

Yes - 7 No - 13 No response - 5

Comments:
1) There is no pickup service.
2) Rarely use -- request by phone when required.
3) Does DDC know what the word "RUSH" means?????
4) The pickup itself is difficult because DDC will not keep courier letters on file. The couriers' letters must be dated the same day as pickup.
5) Releasing agencies do not have the staff to take care of the flow.
6) Too expensive.
7) Rush orders usually take a minimum of 4 days.
8) No complaints about DDC, they are very responsive. NTIS rush orders recently took 7 days.

B) Would you be willing to pay for a rush service?

Yes - 14 No - 5 No response - 6

Comments: Two users commented that they would pay in cases of extreme emergency and if the service were improved.

C) Do you have any suggestions for simplifying the document pickup procedures at DDC?

1) First, let's institute a pickup procedure, then we can talk about simplifying it if necessary.
2) Takes too long to be available for pickup.
3) Have never tried, wasn't aware the option was available.
4) Yes, there should be a procedure, there is none. The ordinary flow must be intercepted and interrupted, a very different thing from having a pickup procedure. It is time wasting.
5) No problem.
6) Letters of security clearance status on file with DDC at all times.
7) No suggestions for solution of problem we have encountered. When a report bibliography is ordered on the terminal and a request made that it be available for pick up by the requester, the bibliography is invariably mailed to us anyway.
8) Yes. Institute a way of having standing clearance on drivers rather than each time having to send a specific letter.
9) No - 5

6. A) Do you have a deposit account with NTIS to pay for DDC documents?

Yes - 25 No - 0

B) Do you check your monthly statements from NTIS?

Regularly - 21 Occasionally - 1 Never - 2 No response - 1

C) Is the duplication of a request by DDC a problem?

Yes - 4 No - 18 Occasionally - 1 No response - 3

Comments: Only in that it generates more work and complications on the statements.

D) Do you return documents to DDC for credit?

Yes - 9 No - 11 No response - 4

Comments: You mean we can??????

E) Are you satisfied with the crediting of the deposit account for documents returned to DDC?

Yes - 7 No - 2 No response - 12

Comments:

1) It is too slow.
2) It is again a complicated task to check on when and if credit is made.

F) Would a notice of credit from DDC giving date sent to NTIS and the AD number being credited be useful?

Yes - 12 No - 4 No response - 9

Comments: More useful would be notification of the credit itself.

G) What would be the value of an overall cost effectiveness study conducted by DDC in the interest of the user?

Very useful - 4 Useful - 7 Not useful - 2 No response - 5

7. A) What is the normal turnaround from the time a document is ordered until it is received?

No response - 0
2 weeks - 12
2-3 weeks - 2
3 weeks - 2
2-4 weeks - 2
2-6 weeks - 1
3-4 weeks - 1
3 weeks to 10 months - 1
4-8 weeks (L's) - 1
6-8 weeks (L's) - 1
2-6 months - 1

Comments: In our experience it varies greatly upon age, format and unusual factors such as the phase of the moon.

B) Is the turnaround time reasonable?

Yes - 12 No - 11

C) Does it compensate for the fact that no "rush" service exists?

Yes - 5 No - 12

Comments: As a government agency, we have obtained things on a rush basis - normally 2 days. Simply plan ahead. The front brackets are misplaced, they should go in front of the 'no' (i.e., "No rush" service). "Rush" orders should be ready within hours; 1½ days at maximum. Nothing compensates for no rush service.

D) If DDC offered a "formal" pickup service, would you be willing to pay for it?

Yes - 9 No - 10 No response - 6

8. A) Do you use microforms?

1) Microfiche - 7 Microfilm - 1 Both - 17

2) Occasionally - 12 Extensively - 13 Never - 1

B) Do you have any problems with downgrading of microforms?

Yes - 12 No - 11 No response - 2

Comments:

1) Who doesn't? No practical way to change classification. The problem is in being able to mark the film; downgrading on the container is not very satisfactory. We reorder from DDC/NTIS.
2) Doesn't everyone unless they are overstaffed and underworked.
3) No feasible method to accomplish. AEC issues new microfiche.

9. A) Would a separate notification of regrading for DDC reports be useful?

Very useful - 10 Useful - 6 Not useful - 6 No response - 2

Comments:

1) Make also annual cumulation giving report series information, not just AD #. Takes too long, costs too much.
2) Present notice in TAB is quite satisfactory for changes in classification. A similar notice for changes in downgrading and declassification schedule would be greatly appreciated.

B) Would you be willing to pay for such a service?

Yes - 5 No - 15 No response - 4

10. Do you have any particular problems with the downgrading of documents received from DDC?

Yes - 4 No - 15

Comments: When you receive a downgraded document, you must mark the pages to comply with DoD. We receive documents which should have been downgraded or declassified but haven't been by DDC. This creates a lot of extra paperwork to correct as they go to our classified mail room for logging in before coming to us. Difficulty in determining downgrading action.

11. A) In what areas does the limitation statement cause problems?

Ordering - 12	Filing - 3
Verifying - 6	Receipt time - 13
Length - 3	Automatic distribution programs - 2
Internal routing - 3	No problems - 3

Others:

1) DoD contractors use the Army Library rather frequently, and require close supervision by Library personnel.
2) Difficulty in getting the need-to-know statements from the users (requesters).

B) Do you have any recommendations to simplify the handling of limited requests?

1) No.
2) Make all reports accessible to government agencies. Follow up and correct addresses of releasing agencies.

3) Rewrite the directive on limitations, make sure limitation statements are properly and legitimately applied. Make DoD liaison officers in DDC responsible for releasing limited documents.
4) I feel that entirely too many reports are placed in the limited reports category, and their justification is test and evaluation which I believe is over-used.
5) If releasing agencies could be increased in size in order to handle bulk more efficiently, our problems of providing the information within a worthwhile time frame would be solved. In order to "motivate" the releasing staffs we could make them aware of our contributions to the DDC document collection. They only see it as a one way street - a give away program on a need-to-know basis!
6) As a representative from a DoD agency, I feel the controls applied to limited documents are justifiable. I see no way to further simplify the procedures.
7) Yes. DDC should handle the whole thing. However, it is so much better than the old system that we are not complaining.
8) Establish machinery to permit DDC to make the necessary decisions.
9) Put all limited documents in separate categories and series of numbers based on type of limitation statement. That way we can send DDC Form 55 along with the order when it is required. We can't always, or even most of the time, take the time and effort to use the Form 55 as we qualify as USGO and DoD (which are probably 70-80% of the limitations used).
10) The Navy is particularly bad about limitation statements. They seem to put them on so many things, yet in my experience they have rejected very few of the Form 55's sent them for release of a controlled document. This seems to be a case of unneeded limitation statement usage.
11) Encourage releasing agencies to handle limited requests promptly, and to notify requestors when requests are disapproved.
12) Recent system has been a tremendous help.

Other comments:

DDC telephone reference is marvelous. People there are routinely helpful, knowledgeable, and willing to offer information without having to be prodded. Ah....that NTIS did likewise.

Appendix H

USER CHARGES

Questionnaire

Library Questionnaire. As the responses came in, libraries were given a number (in random order). Statistics were requested for 1967, 1969, 1971 and 1973 to show documents ordered and searches requested (number and cost) from DDC, NTIS, GPO, and others. If figures were supplied for only one annual period, these were not included in the tabulations, since they could not be compared to show a trend. Responses were, as follows:

	Government Libraries	Non-Government Libraries
No statistics	7	3
1973 or 1974 only	5	6
1971 or 1972 through 1973	2	2
1969 or 1970 through 1973	3	3
1967 through 1973	3	6
Total	20	20

The replies indicated, in some cases, that library records had been destroyed, simply were not kept, or were kept in such a way that the number of documents and searches ordered from each source (and dollars spent) could not be retrieved. Six libraries were too new to have accumulated records beyond a year or two. However, the statistics which were supplied came from libraries whose total orders for documents and bibliographic searches from all government sources, last year, ranged from less than 50 to more than 12,000 orders. Their expenditures for these ranged from less than $300 to more than $50,000. This is not a large sampling, but it is representative.

The combined total of documents and searches ordered from DDC and NTIS over the years indicated were reported, as follows:

Documents Ordered from DDC & NTIS by Government Libraries

Library	1967	1969	1971	1973
6		500 ($1300)	1100 ($2400)	700 ($2400)
7	178 ($970)	465 ($1300)	520 ($2800)	372 ($2000)
9	7800 (no record)	12297 ($1400)	17342 ($7100)	16955 ($19500)*
			*Includes ADD and SCIM	
10			140 ($500)	500 ($800)
25			100 ($300)	120 ($450)
30			260 (no cost)	126 (no cost)
35			600 ($17)	160 ($860)

Documents Ordered from DDC & NTIS by Non-Government Libraries

Library	1967	1969	1971	1973
1		3300 ($2600)	2500 ($3500)	2000 ($4600)
4	(1970)	11000 ($5500)	12000 ($13000)	7000 ($11000)
5		(1972)	1500 ($2300)	2800 ($6000)
8	7200 (no record)	7130* (no record)	4450* (no record)	3520* (no record)
24		(1972)	25 ($100)	22 ($75)
27		1700 (no record)	1600 (no record)	1900 (no record)
28	24** ($135)	1200 ($3000)	1000 ($2200)	5000 ($1500)
29		3000 (no record)	1300 ($5100)	1000 ($4800)
31		13 ($40)	141 ($400)	200 ($800)
36	800 ($3500)	5600** ($16500)	5400** ($20000)	6100** ($25600)
37	(no record) ($62)	(no record) ($85)	(no record) ($1800)	580 ($1300)
40	3000 ($550)	3500 ($1600)	2600 ($375)	500 ($550)

*figures include NASA
**NTIS only

Searches Ordered from DDC & NTIS by Government Libraries

Library	1967	1969	1971	1973
9		252 (no cost)	287 ($75)	355 ($1075)
25			10 (no cost)	12 (no cost)
30			8 (no cost)	10 (no cost)
35		3 (no cost)	2 (no cost)	3 (no cost)
2	DDC on-line terminal used.			

Searches Ordered from DDC & NTIS by Non-Government Libraries
(figures exactly as reported)

Library	1967	1969	1971	1973
1	3 (no cost)	15 (no cost)	62 (no cost)	125* ($50)
	*NTIS searching also done on Lockheed's DIALOG			
4			104 ($100)	119 ($185)
5		(1972)	49 (no record)	11 ($552)
8	91 ($200)	102 ($200)	66* (no cost)	108* (no cost)
	*NTIS searching done on Lockheed's DIALOG			
28		1 (no cost)	1 (no cost)	0 (no cost)
29			48 (no cost)	40 (no cost)
31	13 (no cost)	26 (no cost)	31 (no cost)	22 (no cost)
36	156 (no cost)	160 (no cost)	218 (no record)	98 ($150)
37			17 (no cost)	4 (no cost)
40	144 (no cost)	58 (no cost)	55 (no cost)	33 (no cost)
32	Have NTIS and NASA tapes which are run in-house.			

Three questions were asked which required explanatory answers:

1. Didyour library switch from hard copy to microfiche as a result of imposition of user charges? If so, to what extent and when? What effect did this have on your library operation?

Twenty-five libraries replied -- 14 yes and 11 no. Those who said yes either switched in part or all the way to microfiche -- because of the cost, to save space and/or because it was received more quickly. Most of these indicated that the change of their own acquisition policy took place about the time that DDC imposed user charges for hard copy and continued to provide microfiche free of charge (and more quickly). Common practice among libraries is to order microfiche, screen the documents for relevance and then order hard copy or print a blow-back copy in-house. Eleven libraries reported they do not use microfiche at all; that their users hate it and they continue to order hard copy even if they must order fewer documents because of the cost.

As for the effect on the library, use of microfiche has meant duplicating document orders -- in microfiche and then in hard copy, retraining staff to handle this new format, renting in-house copy equipment, purchasing or renting envelopes for filing microfiche, buying storage cabinets, developing new procedures for downgrading classified fiche, using manhours to print blow-backs, to process invoices or to maintain deposit accounts.

2. Was the number of documents ordered (and/or cost) significantly different one year from another? Explain.

Twenty-two libraries replied. Nine said they ordered fewer copies because of cutback in staff, reduction in budget, borrowing more, not because of cost, because of cost, tight budget, no longer a growing library or no longer have Federal funding. Four replied they have ordered more because they are a rapidly growing library. Eight pointed out their orders have remained about the same. One simply decried the fact that $1,440 was paid to GPO last year for DoD telephone directories.

3. Were there other effects of user charges not covered by the above?

Eleven libraries replied. In some ways this question was a catch-all for complaints about additional record-keeping, escalating costs, lack of efficiency, slowness of service, poor quality of searches and printouts, duplication of orders, mistakes in billing, etc. -- all of which add up to higher library costs.

Some of the actions being taken by libraries to cope with the rising costs are -- streamlining their own systems, obtaining hard copy documents from source when possible, borrowing rather than purchasing, encouraging researchers to borrow from each other, curtailing library selection of items of possible interest to staff, eliminating routing of Government Reports Announcements (GRA) and Index (GRI), or dropping the subscription to GRA and GRI altogether.

User Questionnaire. The User Questionnaire was a checklist designed to be tabulated quickly, but several users added comments which were very enlightening. A total of 175 replies were received. Seventeen were eliminated because they quite obviously were filled out by the librarian. Those replies had already been tabulated in the Library Questionnaire. The remaining 158 are summarized below:

1. Are you aware that ALL reports from DDC, NTIS, etc. cost money?

   Yes - 141
   No - 16
   No response - 1

   Comments: Free document service is available to military service schools.

2. What influence does cost of documents have...

   ...on number of documents you order?

   No effect - 110 (Comments: I order what is necessary in performing my assigned tasks; order only when needed; if necessary for project; unless price is known to be excessive as in the case of a bibliobraphy I received recently at $1.00 per page.)

   Order ____ less - 42 (Comments: Fewer; in proportion to cost; bare minimum; 50% less; 25% less; one copy; one third; number depends on cost and need; small; can't quantify; 2%; 10%; fewer marginal topic items; we look over the search more closely than we used to; maybe 1/2 to 1/3.)

   No response - 6

   ...on requesting hard copy vs. microfiche?

   No effect - 50 (Comments: Order microfiche when appropriate; not aware of difference in cost; speed more important; library decision.)

   Order hard copy anyway - 42 (Comments: For graphs, curves, plots of detail not retrievable or inconvenient from microfiche; for reproduction for other readers; no microfiche reader available; less frequently; I find fiche unsatisfactory; in minimum number; if I expect to use a document extensively; influenced by importance of document to task; I circulate to many people for comments and MF is not amenable to this type of use, even after reproduction.)

   Order microfiche more often - 64 (Comments: More often than I would like; some are so poor that a hard copy has to be ordered ultimately; use only to scan for possible application; generally only buy hard copy when microfiche is not legible.)

   No response - 7

   ...on how you acquire information?

   No effect, use same library channels - 116
   (Some crossed out "library.")

Borrow more often from colleagues - 26

Arrange free distribution through special contacts - 23

Go without information - 14
(Comment: Sometimes)

No response - 1

...on budgeting for projects?

No effect - 115 (Comments: Ordinarily a very small percent of total; information costs already included; cost of document is viewed as marginal in entire budget for a project; travel is much more important; true impact is on information procured for general interest.)

No funds provided - 20 (Comments: Deduction from funds otherwise available; haven't thought of additional funds required.)

Additional funds allocated - 19 (Comments: Provided I could make a reasonable estimate of what the charge would be.)

No response - 4

Appendix I

PERIPHERAL SERVICES

Questionnaire

1. What type of organization do you represent?

   Government, DoD - 9
   Contractor - 11

2. How many years have you been dealing with DDC?

   Average - 8 years

3. Do you receive the DDC Digest?

   Yes - 20
   No - 0

   a. How do you use it?

      Route to library staff only - 12
      Route to library staff and others - 8

   b. Is it issued often enough?

      Yes - 20
      No - 0

   c. Is it an effective tool for the announcement of changes, new procedures and plans?

      Yes - 17
      No - 3

      Comments: The Digest seems to be a post-announcement rather than a pre-announcement tool. It would be more effective to announce changes, etc. before they occur.

4. Do you have a copy of DRIT -- DDC Retrieval and Indexing Terminology?

   Yes - 16
   No - 4

   a. How is DRIT used in your library

      1) In subject searching by the library staff:
         Frequently - 0
         Occasionally - 2
         Never - 13

      2) In subject searching by the research staff:
         Frequently - 0
         Occasionally - 3
         Never - 17

      3) By your cataloging staff:
         Frequently - 0
         Occasionally - 1
         Never - 19

5. Do you have a copy of TEST - Thesaurus of Engineering & Scientific Terms?

   Yes - 8
   No - 12

   How is TEST used in your library ?

   In subject searching by the library staff:
      Frequently - 0
      Occasionnaly - 3
      Never - 17

   In subject searching by the research staff:
      Frequently - 0
      Occasionally - 2
      Never - 18

   By your cataloging staff:
      Frequently - 1
      Occasionally - 0
      Never - 19

6. Are you aware that DDC prepares scheduled bibliographies in areas believed to be of interest to its users?

   Yes - 17
   No - 3

   a. Do you ever order them?

      Yes - 4
      No - 16

         On demand only - 2
         As general interest publications - 0
         As publications of interest to specific people - 2

   b. Are these bibliographies timely?

      Yes - 4
      No - 3
      No response - 13

   c. Should DDC publish scheduled bibliographies?

      Yes - 4
      No - 3
      No response - 13

7. Are you aware that DDC publishes the following kinds of documents?

   a. Microfiche/film viewing equipment guides:

      Yes - 16
      No - 4

      Do you have a copy?

         Yes - 15
         No - 5

   b. Source header list:

      Yes - 4
      No - 16

      Do you have a copy?

         Yes - 4
         No - 16

   c. DDC Referral Data Bank Directory?

      Yes - 8
      No - 12

      Do you have a copy?

         Yes - 8
         No - 12

   d. Acronyms & Alphabetic Designator list:

      Yes - 7
      No - 13

      Do you have a copy?

         Yes - 6
         No - 14

8. Do you try to keep aware of new DDC publications?

   Yes - 16
   No - 4

9. Should DDC continue to publish the kinds of documents listed above?

   Yes - 12
   No - 1
   No opinion - 7

10. Do you know that DDC has a library?

    Yes - 19
    No - 1

    Have you ever used it?

       Yes - 10
       No - 10

       Comments: The DDC library seemed too shallow in scope for the kinds of specialized needs my organization has.

11. Are you aware that DDC maintains a data file of references to government-sponsored activities specializing in scientific & technical information services?

    Yes - 4
    No - 16

    a. Have you ever used this service?

       Yes - 0
       No - 20

    b. Do you have the published directory?

       Yes - 12
       No - 8

12. Do you know that DDC registration files (FOIR) are a source of information on addresses, controlling offices, contract numbers, etc.?

    Yes - 4
    No - 16

    a. Have you ever requested information from these files?

       Yes - 3
       No - 17

    b. Were you satisfied with the results?

       Yes - 3
       No response - 17

13. Have you ever toured DDC or attended one of their briefings?

    Yes - 12
    No - 8

14. Do you know that DDC is a NATO subregistry?

    Yes - 12
    No - 8

    a. Have you ever used the subregistry?

       Yes - 4
       No - 16

    b. Do you receive foreign documents on primary distribution through DDC?

       Yes - 6
       No - 14

Appendix J

GENERATION AND MANAGEMENT OF DOD INFORMATION

Questionnaire

The first question (Where does the work project originate?) indicated so many sources of programs it was uncodable. Some of the answers are easily understood, but there are a few scores that should have special attention. For instance, Question 2 (Who is assigned the reporting responsibility?) was intended to find the person or position that, as author, should be a good contact when DDC is trying to establish a new format for reports. This could be in their preparation of reports and leads to better microfiche making or special type for optical scanning storage.

The questions, and compiled answers, are:

2. Who is assigned the reporting responsibility?

   Project manager or leader - 63%
   Project group - 3%
   Field Office, Laboratory or Division - 14%
   Info. Spec., Data center or Library - 6%
   Others or no answer - 14%

3. How is classification and distribution of reports determined?

   Agency standards - 47%
   Sponsor/originator - 42%
   All reports unclassified - 9%
   Author - 1%
   Uncertain - 1%

4. At what point in the program do information needs become apparent?

   Initially - 67%
   Midway through project - 1%
   End of project - 3%
   Initially and throughout - 28%
   Throughout - 6%
   No answer - 3%

5. (DoD only) At what point does the DD 1498 cycle fit in the project?

   Commencement of project - 33%
   Afterthought or end of cycle - 6%
   Regular cycles of 1498 reporting - 4%
   Varies - 4%
   No answer - 47%

6. Where do you turn for your first cut of information?

   Library - 62%
   Peers - 4%
   Inhouse (Office, etc.) - 3%
   Sponsor - 4%
   Document literature - 8%
   Own files and library - 8%
   Personal files only - 3%
   Other - 8%

7. What data banks do you maintain to which you may refer as opposed to DDC materials?

   In-house, departmental and/or personal - 44%
   Library - 29%
   Access to specific specialized data banks - 8%
   None - 5%
   Not applicable or no reply - 14%

8. What information do you maintain to fulfill Defense contracts or projects?

   In-house, departmental and/or personal - 46%
   Library - 17%
   None - 10%
   Not applicable or no reply - 27%

9. How are you able to obtain information for the following if you do not have a registered need-to-know in DDC?

   Direct to source - 8%
   Peer group - 8%
   Library - 10%
   Impossible - 11%
   Not applicable (DoD) - 46%
   No reply - 17%

   The sub-parts to this question were:
   1. Industry - Unsolicited proposals. This drew most of the "impossible" answers.
   2. DoD - Independent Research and Development. This elicited the great number of "not applicable" responses, together with a few dreamy industry types.

10. (Industry) Is the relationship with the DCASR representative re information a smooth one?

    No - 2%
    Yes - 11%
    Not applicable or no reply - 87%

11. Is communication good between the producers, processors and users of technical information in respect to your needs?

    Yes - 54%
    No - 13%
    Fair to good (Time lag, limitations, etc.) - 22%
    Not applicable or no answer - 11%

12. How do you think the security and limitation problems hamper the reasonable, rapid exchange of technical progress?

    Do not hamper or no problem - 30%
    Is a problem - 49%
        Slows down exchange, proprietary problem, overclassification, etc.
    Not applicable or no answer - 21%

13. Do seminars, conferences, etc. provide a useful source of technical information?

    Yes - 79%
    No - 5%
    Minimal or sometimes - 13%
    Not applicable or no answer - 3%

14. Have you used the resources of the DD 1498's and 1634'3 for the basis of establishing a program or research?

    Yes - 22%
    No - 42%
    Sometimes - 7%
    Not applicable or no answer - 29%

15. Do you use the Information Analysis Centers such as the Plastics Data Bank at Picatinny Arsenal or the Battelle Centers?

    Yes - 22%
    No - 59%
    Occasionally - 13%
    Not applicable or no answer - 6%

16. (DoD) Do you plan briefings for industry of the programs you initiate?

    Yes - 20%
    No - 38%
    Occasionally - 10%
    Not applicable or no answer - 32%

17. Do you or your staff make regular efforts to have results of programs reported in professional journals?

    Yes - 45%
    No (Most say they do not have time) - 35%
    Occasionally (Classification constraints) - 18%
    Not applicable or no answer - 2%

18. Do you have problems obtaining DoD technical manuals and standards as different from the technical reports issued by DDC?

    Yes - 17%
    No - 50% (except for time lag)
    Occasionally - 5%
    Not applicable or no answer - 28%

The questionnaires were sent to 34 members of the Information Hang-ups Committee for them to interview 5 of their R&D type users. Sixty-four responses were received from the following 13 groups:

Army Concepts Analysis Agency
Army Foreign Science and Technology Center
Army War College
Atlantic Research Corp.
Atomic Energy Commission
Bendix, Communications Div. Services
NASA Langley Research Center
National Military Command System Support Center
Naval Oceanographic Office
Naval Ordnance Lab., White Oak
Naval Ordnance Station, Indian Head
Naval Weapons Lab.
Westinghouse Defense and Space Center.